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Original Articles

REPORT OF A SMALL EPIDEMIC OF ACUTE ANTERIOR POLIOMYELITIS.*

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Flint.

We have had this past summer in this locality such an unusual number of cases of acute poliomyelitis that it amounts to a small epidemic. Others have been reported in this state, such as the one in Western Michigan reported by Ostrander (1) and one recently noted in the newspapers at Chesaning.

Of the cases given in this vicinity I have had the privilege of studying three personally. The others found in the report later are through the kindness of the physicians whose names are given with them.

Acute poliomyelitis is known by various names, as infantile paralysis, acute atrophic paralysis, acute infantile spinal paralysis, acute bulbar palsy, acute polioencephalitis, essential paralysis of infants, etc., names all more or less descriptive of the patient or the lesion, but none of them being exact or as comprehensive as the pathology of the condition calls for.

Etiology.

The specific causative agent, if there be one, of acute poliomyelitis has never been found, although from the character of the lesions, the tendency to epidemics, the apparent following of lines of travel, its prevalence in summer and autumn, and the clinical course, an infective or toxic factor is presumed to be present.

The disease, especially in sporadic types, has been attributed to many forms of preceding illness, accidents, exposures, unhygienic surroundings, etc., but it happens often independently of such influences, especially in the epidemic cases, and none of them occur often enough to insure more than an accidental relationship. There seems to be a possibility that dry summers may have an undue influence in its development.

Bowel disturbance with diarrhea or constipation occurs in nearly one-half of the cases and an initial angina is often mentioned. These point to the alimentary tract as the atrium of infection.

The cases when sporadic, occur in the summer in 80% and the epidemics always occur at this time with possibly a few earlier or later.

In the sporadic cases 80% occur before three years of age and are rare after ten,

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while in the epidemics no age apparently is exempt, though the most of them occur in early childhood. Males are slightly more often affected than females, but not to any marked degree. Leegaard and Wickman[3] describe epidemics which follow lines of communication closely and even individual cases which were due to contagion traceable to preceding ones, but ordinarily the direct spread is not so evident that it attracts attention. In all large epidemics there are cases occurring in more than one member of the same family, as in the recent one in New York where there was one family with three cases and three others with two each attacked. In the epidemic I report one family had two little girls stricken within one week.

The sporadic cases, while not rare, are so uncommon that many physicians never see one unless they have presented to them an old case in some clinic, but an epidemic makes them so plentiful that they attract wide public interest, and the children's hospitals are filled with them.

Among the more prominent epidemics listed at present is the early one of Colmer in Louisiana, in 1841, so far as known the first one reported. This comprised 8 or 10 cases. Bull in Norway, reported 14 cases in 1868. Caverly in Vermont, reported 119 in 1894[5]. Since then they are mentioned more often until now nearly fifty are given.

The majority of the epidemics are in the United States and the Scandinavian peninsula. Wade and Litchfield report 69 cases in Australia. This is the only one elsewhere than in the two regions mentioned, which is of note[6].

In Norway in 1905 and 1906, over a thousand cases occurred, and in New York city and its suburbs in 1907 over 2,000 cases. It is from these large epidemics that much of our knowledge must come regarding the disease.

Pathology.

Starr[1] reports the findings from extensive investigations of the spinal fluid obtained by puncture, and the blood serum of cases in the New York epidemic with a post-mortem examination of only one case, and that two months after the acute attack in a patient dying of miliary tuberculosis. The serum investigations throw no light of a positive kind on the subject. Harbitz and Scheel[7] have given us the results of very minute and careful examinations by post-mortems of 19 cases in the Norway epidemic, most of them during the acute stage of the disease. Their findings are the same as others have obtained, but are given in so much more detail that we are indebted to them for our knowledge of the morbid changes in this condition.

There occurs an inflammation of the pia mater in all cases, even the mild ones, which extends throughout the spinal canal and the cranial cavity. This is a simple non-purulent condition with extravasation of lymphocytes and a very marked congestion, especially along the anterior portion of the cord and the base of the brain. It is unlike the inflammation of cerebro spinal meningitis in that there is no extravasation of polymorphonuclear cells and no suggestion of a purulent condition.

This process is intensified in various localities and extends along the nutrient vessels into the substance of the cord and bulb; here there is developed an edema, thrombosis of the veins and arteries, hemorrhages, and small hematomata in some cases. There ensues a degeneration and loss of the most perishable structures present, and that means the cells of the gray matter, especially in the anterior horns. Active phagocytosis of these diseased cells is found. The more resistant white columns and the meninges escape any destruction of a similar kind so that if

recovery follows the residual symptoms are due to the loss of the terminal neurones which cannot be regenerated. This process is found in any part of the nervous system, the anterior horns and the motor nuclei of the bulb suffering most often; less frequently the basal ganglia and even the cortex of the brain are involved in the same manner.

The symptoms and the ultimate results depend upon the severity of the pathological process and the extent of the destruction of the gray matter, and the location of these lesions.

No conditions comparable to those of cerebro spinal meningitis nor of multiple neuritis are found. so that the relationship of these diseases claimed by some from clinical symptoms is doubtful. On the other hand in the Norway epidemics cases of various kinds showed typically, both clinically and by postmortem examination, what ordinarily we consider a distinct disease, i. e., transverse myelitis, also just as typical cases of acute bulbar paralysis, and acute encephalitis without paralysis were found, and in addition cases which were apparently transitional between these diseases and the usual poliomyelitis. The different localizations of the process alone made the differences in the clinical course. No part of the central nervous system is exempt from the disease.

They regard Landry's paralysis the same as a severe ascending poliomyelitis. A study of 23 cases of Landry's paralysis collected by Hall and Hopkins, and their comparison with cases of severe polyomyelitis show no essential clinical differences. In fact there is a possibility that after all they are similar conditions, and that they occur sporadically unassociated with other cases which would establish the relationship. E. D. Black[9] reports a case in New Mexico as Landry's paralysis in an eight-year-old child, which is an exact counterpart of many cases found in poliomyelitis epidemics.

The symptoms of meningeal irritation and cerebral disturbance so often found in the early days of cases of infantile paralysis support the findings of an extensive, almost general, meningeal inflammation with secondary localizations of greater intensity; and the occurrence of the paralysis subsequent to these meningeal symptoms points to a later involvement of the cord itself.

After the acute symptoms subside and the inflammation clears up, there is little left to show, except in those areas where the nerve cells were destroyed, where there is atrophy of the cord, with a disappearance of the essential cells entirely, or nearly so, those remaining being of small size. The nerve roots leading from this region are small and the muscles, deprived of their innervation, undergo secondary atrophy with a replacement of the fibres by fibrous and fatty tissue. The limb or portion of the body involved, if in a child, never develops fully, and becomes deformed from the action of gravity, a lack of muscular balance, and improper use.

Symptomatology and Course.

For purposes of convenience in describing the clinical course of the disease the following arbitrary divisions may be made:

1. The abortive poliomyelitis.
2. The poliomyelitis of moderate severity (usually resulting in a monoplegia, or possibly a group of muscles being paralyzed).
3. The acute ascending poliomyelitis of severe type.
4. The bulbar poliomyelitis.

Abortive poliomyelitis occuring sporadically, or in the practice of a physician not familiar with the condition, though it is during an epidemic, will not be diagnosed. During epidemics they

are frequently found, and are mentioned in all the later reports in considerable number.

In this type the patient has a fever of moderate degree, is restless, anxious, possibly has some bowel troubles, and has headache, neckache, and backache, with pains down the legs. There may be muscular twitchings and sensitiveness when handled. After three or four days these symptoms subside, and then it is noticed that the patient is disinclined to use the legs, and if old enough complains of muscular weakness and fatigue out of all proportion to the duration and severity of the illness. No actual paralysis develops. In a week or two there is complete recovery.

In the ordinary cases where paralysis does occur, the prodromal symptoms are the same, excepting that they are probably more severe. There may be muscular rigidity in the neck and retraction of the head. The temperature runs up to 101 or 103° F. There may be vomiting, sweating, prostration, restlessness, and severe pains in the back and extremities. There is often an inability to empty the bladder and little control of the bowels. This continues three or four days, when paralysis occurs, though it may be unnoticed until later because of the severity of the other symptoms. The affected extremities are flaccid and tend to get cold and cyanosed. The paralysis may be limited to one group of muscles, or to one extremity, or may involve the trunk or upper extremities. It reaches its maximum in a few hours to three or four days. In a week or ten days after the paralysis occurs the patient begins to improve until only a comparatively small amount of the original paralysis remains permanent. Recovery may be complete even in severe cases, especially in the epidemics. The control of the bladder and rectum when lost is always regained in 9 or 10 days, and the trunk muscles usually recover[10].

At one end of this group we have the very light cases which show only a little peevishness or some slight indisposition before the paralysis is noticed. The patient may not be brought to the attention of a doctor at all until a helpless limb alarms the parents. This mild type is more often found in the sporadic occurrence of the disease than in the epidemic form.

The acute ascending poliomyelitis is exactly like that described above excepting that the lower extremities, bladder and rectum, abdomen, back, chest, upper extremities, throat, etc., are involved in order until as the medulla is attacked, respiratory paralysis ends the distressing scene.

In the bulbar poliomyelitis, the symptoms outside of the paralysis are much the same; the motor nuclei of this region being first involved, the paralysis affects the throat, eyes, face, tongue, etc. There are found all the varieties of strabismus, typical Bell's palsy, difficulty in phonation, deglutition, choking, and related symptoms. The paralysis may pass downward and respiratory failure occur, as in the ascending type. Recovery may be partial or complete as in the other forms.

If death does not occur, after the acute stage has passed, there is a period of quiescence for two weeks or a month, then a rapid improvement follows, which becomes slower after three months, although some slight additional improvement may be expected up to two years.

Diagnosis.

This disease occurring sporadically cannot be diagnosed unless the paralysis is very evident. It may simulate a beginning typhoid or meningitis closely, but the muscle failure serves to distinguish them when it comes. After this occurs it must be differentiated from multiple neuritis, transverse myelitis, Landry's paralysis, hip-joint disease, and

the pseudo paralysis of scurvy and rickets. The latter three conditions should be eliminated if care is used.

Multiple neuritis may be distinguished with difficulty in some cases, and one may be in doubt until the course is followed for some time. The slower onset, the simultaneous involvement of all four extremities, the tenderness which persists along the course of the nerves and other features in those cases which are not so like poliomyelitis will assist in labelling them.

Landry's paralysis is still a vague term. If we confine it to those cases with acute ascending paralysis without the involvement of the bladder or rectum, and without evident lesions when examined post mortem, then we can distinguish them by combined clinical and autopsical features. If we include those cases of acute ascending paralysis without a co-existent sensory paralysis, then we cannot tell the difference between them.

Transverse myelitis has a sensory paralysis, also bedsores and permanent sphincteric loss in bladder and bowel to distinguish it. Yet in poliomyelitis epidemics we may have cases of this type, as has been mentioned.

Prognosis.

In the abortive cases recovery can be promised.

In the sporadic type very few recover completely, and on the other hand they almost never die[2].

There is always a great recession in the extent of the paralysis until only a muscle or two remains disabled, or a group of muscles functionally related, as the flexors or extensors of a limb.

In the epidemic form complete recovery is common; even in those with all the limbs and the trunk involved recovery may be complete, as occurred frequently in the New York epidemic. This total recovery is found in one out of four cases, though the percentage varies in different reports, probably in part due to the difference in the inclusion of abortive cases.

Wickman reporting the Norway epidemic, states that the older the patient the graver the outlook, death being the rule in adults and frequent in older children. Taking all ages into consideration, death from respiratory paralysis, paralysis of the throat with regurgitation, choking, etc., comes on in different epidemics in from 6% to 25% of the cases. The higher mortality may in part be due to the omission of the abortive cases in the tabulation. Probably the average mortality is about 10%. In the great New York epidemic it has been estimated at 6 to 7% by Starr. In the Scandinavian about 13½%.

If the patient survives until the 10th day he will probably live, the most of the fatalities happening in about six days.

If the paralysis is of rapid progressive type the prognosis is grave indeed. One can in these cases watch one reflex after another fail and find one after another of the muscles relaxing, becoming flabby and useless, until the respiratory muscles begin to suffer, then begins a struggle which is painful to watch, and this, with choking from a relaxed tongue, finally terminates the spectacle.

In individual cases an electrical examination of the paretic muscles will be the best means of predicting the outcome. These muscles which lose their faradic excitability early and completely will never recover much. Those which lose it slowly or not so completely will recover nearly entirely. In those muscles which after two weeks still show faradic excitability, recovery will be complete although there may still be a greater loss first[11].

Treatment.

The treatment of poliomyelitis natur-

ally falls under three heads, i. e.:

1. The acute stage.

2. The stage of quiescence and improvement.

3. The chronic stage.

The treatment during the acute stage is one of expectancy, for we have nothing of proven efficiency in arresting the progress of the disease or limiting its extent. Theoretically a position on the face or side should relieve the congestion some and possibly prevent some of the vascular lesions. Dry cups, counter irritation of many kinds, ice bags, hot applications, etc., are recommended for use locally.

The bowel needs simple attentions and the bladder may need to be catheterized, the process being assisted by pressure on the abdomen because of the weakened muscles. Purgation, diuresis, sweating, are all used because of their supposed effect in eliminating the supposed toxins causing the trouble.

Of medicines other than those which have the above actions, as usual where none have much influence many are recommended. Urotropin and the salicylates are suggested for theoretical reasons. Aspirin, phenacetin, codein, morphine, and opiate mixtures are useful in controlling the pain. Ice to the head, where meningeal irritation is marked, seems proper. Strychnine is strongly advocated by some and as strongly condemned by others, and if it is used it should be late, after all active inflammation has subsided.

On the whole we can say that the best treatment is the one which attends to the comfort of the patient and the elimination of the excretions by the simplest measures.

During the quiescent stage and stage of improvement, the attention should be directed towards keeping the general condition of the patient as good as possible and to prevent overstretching of the weakened muscles and deformities by malposition. Light pliable splints do this all right when adapted to the case. It should be remembered that a muscle which through weakness is allowed to rest in an over-stretched position cannot recover its contractility[2].

I would like to suggest, with this point in mind, that possibly the reason extensor paralysis with footdrop is the most common deformity left after an attack of poliomyelitis is because there is a greater tendency for this deformity to occur from the weight of the bedclothes and the action of gravity than any other, and that through a lack of constant correction the extensors do not have a chance to recover as often as they otherwise would.

During the stage of recovery the muscle nutrition can be maintained properly by massage, warm baths, warm clothing, salt rubs, moderate use of those muscles which are partly controlled, and similar measures, always remembering that the muscles will tire easily, and that the treatments should be short. The applications of electric currents especially can be overdone, and it is a question if they are one whit better than a warm sponging and rubbing with a coarse towel, such as any nurse or mother can give. Electricity is more properly used for prognosis and diagnosis than anything else in these cases.

The most important treatment is that given during the chronic stage or stage of residual permanent paralysis. It is the most important, inasmuch as the surgeon's influence here determines the subsequent condition more than at any other time. He cannot cure the paralysis, but by orthopedic measures he can ameliorate the disability and correct the embarrassing deformities or even by surgical means he can supplant the damaged muscles by active ones, and thus secure functional cures in whole or in part.

Only a few of the useful measures can be mentioned briefly here, as it is a large subject. Excellent presentations of it are given elsewhere by Tubby and LeBreton[12], and also in books treating of orthopedic surgery.

Mechanical appliances are used to fix joints and assist weakened muscles in overcoming improper positions, as in toe-drop and other malpositions of the feet. This may improve a child's walking or enable him to walk when he otherwise could not.

Fixation of the joints by surgically removing the surfaces and allowing a bony ankylosis to form, is useful in some cases, especially those where the parents through poverty are unable to supply expensive apparatus or are apt to neglect its use. This is only advised for the wrist, ankle, and shoulder, and not for the elbow, knee, or hip. It should not be done in a child under 10 years of age, as success is much less assured.

Transplantations of the tendons of good muscles to those of the diseased ones, or better to the periosteum of the bone directly or by silk thread extensions, are frequently of service and secure good functional results. One example of this is where the hamstrings are brought forward and attached to the patella in treating a quadriceps extensor paralysis and thus curing a dangle leg.

Nerve transplantation, where tendon transplantation cannot be used, as in paralysis of the deltoid, has given some good results, but is less certain.

In these surgical procedures, where a restoration of function is attempted, the cases must be carefully studied and selected, and only those with a limited group of muscles affected should be operated.

In the epidemic I wish to report in this region, I have here tabulated those of the cases concerning which I have been able to receive some authoritative details from the physicians whose names are given with them. Others I know have been affected with poliomyelitis hereabouts from reports of an unauthoritative nature, which would bring the total number of cases probably up to fifty. I have thirty of them charted. Of these the clinical histories have been typical of the epidemic poliomyelitis as described, and we have had all of the variations ordinarily given; as three bulbar cases; three acute ascending cases with death, and one which made a partial recovery; cases without prodromal symptoms of note, and those with very severe ones; several with bladder paresis, many with obstinate constipation; a few had diarrhea. The males and females were about equally divided. In age they ranged from 2 years to 32, the average being 10 years, rather higher than is usual. Of those aged 10 and under all lived, 18 in all; of the eight between 10 and 20, two died, 25%; of those over 20, there were four; three died, 75%. This mortality ascent with age corresponds with Wickman's observations. Altogether there were 5 deaths, 16.6%, rather higher than the average epidemic, but in accordance with the higher age average.

Of individual cases a few facts of interest may be mentioned.

Dr. E. C. Rumer had two little girls in one family stricken within a week of one another.

Dr. C. B. Pierson, of Mundy Centre, reports 12 cases in a rural community, a number in comparison with the population much higher than any of the epidemics I could find. Of these six were of the abortive type, with no actual paralysis, but with a muscular weakness out of all proportion to the severity or duration of the illness they had. The associated prodromal symptoms were typical of the disease. Probably many others of a similar kind have occurred here without being diagnosed.

He also reports one case of bulbar paralysis, involving the face, neck and eye

muscles, with a strabismus remaining as a result In view of the fact that Starr states that in the New York epidemic this did not occur as a permanent sequel this case is unique.

Of these cases personally I observed three, the 14th, 23d, and 30th, in the table. The latter only is worthy of comment, inasmuch as the course was so rapid, the patient dying only 18 hours after the paralysis began in the legs. He had for 36 hours intense backache, obstinate constipation, much agitation and anxiety; during the night he was up to urinate three times without noticing any weakness in the legs although he had then some pain in them. He could not empty his bladder, and when he arose to try it again about 7 or 8 in the morning, he fell beside the bed helpless. At 11 a. m. I catheterized him and made an examination which showed a complete paralysis of the muscles below the diaphragm; the reflexes were also absent here. At 4 p. m. respiratory embarrassment began and respiratory paralysis was complete at 7; he was kept alive by artificial respiration until midnight begging for air when it was inefficient; when the end came paralysis was complete excepting in the face, and here it was beginning.

The rapidity and the symptoms of this case are so like Landry's paralysis that one is suspicious of the identity of these diseases.

No.	Locality	Physician	Month	Age	Sex	B.	Paralysis	Results
1	Mundy	Pierson	July	10	m	c	Not stated	Transitional
2	"	"	"	12	m	c	Lower extremities	Transitional
3	"	"	"	10	f	..	Lower extremities	Transitional
4	"	"	"	8	f	c	Bulbar	Part. recov.
5	"	"	"	12	f	c	Rt. arm and leg	Part. recov.
6	"	"	"	6	m	c	Lower extremities	Tot. recov.
7	"	"	"	5	m	c	Not stated	Transitional
8	"	"	"	5	f	c	Not stated	Transitional
9	"	"	"	13	f	c	Trunk and low. ext.	Part. recov.
10	"	"	"	14	f	c	Rt. upper and low. ext.	Part. recov.
11	"	"	Aug.	7	f	..	Lower extremities	Tot. recov.
12	"	"	"	3	f	c	Lower and one upper	Tot. recov.
13	Otisville	Jenne	July	5	f	c	Low. ext. and bladder	Part. recov.
14	"	"	Aug.	22	m	c	All extremities	Part. recov.
15	"	"	"	3	f	c	Acute ascending	Death
16	"	"	Sept.	32	m	c	Bulbar	Death
17	Millington	Garvin	June	4	f	d	Left upper extremity	Recovery
18	"	"	July	24	m	d	Ascending	Death
19	"	"	Aug.	19	m	c	Bulbar	Death
20	Flint	Orr	July	9	f	d	Lower extremities	Part. recov.
21	"	Tupper	Sept.	7	m	c	Lower extremities	Part. recov.
22	"	Stewart	Aug.	6	f	c	Lower extremities	Tot. recov.
23	"	McGregor	Sept.	2	m	..	Left lower extremity	Part. recov.
24	"	Benson	Aug.	12	m	c	Lower extremities	Part. recov.
25	"	Rumer, E. C.	"	4	f	..	One lower extremity	Part. recov.
26	"	"	"	6	f	..	One upper extremity	Part. recov.
27	"	"	"	9	m	..	One lower extremity	Part. recov.
28	"	Knapp	Sept.	3	f	..	Left lower extremity	Part. recov.
29	"	"	Oct.	17	m	..	Both lower extremities	Part. recov.
30	"	Manwaring	Aug.	22	m	c	Acute ascending	Death

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A PLEA FOR EARLY DIAGNOSIS IN CARCINOMA OF THE UTERUS*

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If we will bear in mind that cancer at the beginning is a local disease, that sometimes it is microscopic and cannot be seen, that at some time in its course it is the size of an ordinary pea, that at some time in its course it is only as large as a pigeon egg and limited to a definite area, then we must all admit that cancer can be thoroughly removed, if we make the diagnosis early enough, and that the terrible local and constitutional results which follow when it has spread, and the final death of the patient, can be prevented by an early diagnosis and early removal of the disease.

The great crusade which has spread over the land to check the inroads of tuberculosis, should now be followed by the medical profession taking the initiative for a crusade against cancer, by educating the people to seek relief from those symptoms that are the first manifestations of the disease.

No doubt the medical men often sin themselves by neglecting cases, by giving medicine or simple treatment without a most thorough examination and watching of the case. Of course, physicians are very busy sometimes, and a woman may come complaining about some uterine symptoms, and he may put her off by suggesting some simple treatment. She may go home, and may use this for weeks and months, but finally return with aggravated symptoms, and then, on a thorough examination he may find the case to be beyond all human help. The lack of thoroughness in investigating such cases is a great error of the medical profession.

Every woman in the cancer period of life showing symptoms should be most carefully and repeatedly examined instead of being allowed to use a little wash or taking some medicine.

When I talk about the cancer period of life I mean over forty, but cancer occurs not infrequently a good deal earlier. I have seen it as young as twenty-four and twenty-five years. Hence thorough investigation should be insisted on in *all cases at all ages,* but especially those over forty.

The first and probably the most common symptom complained of is an excessive menstrual flow and the vicious notion held by the women (and I am sorry to say often by the physician) that, as a rule, it is a symptom of the menopause. *This wrong view should be combated at every opportunity.* A woman with a healthy uterus has no more excessive flow at the change of life than at any other time, therefore, the first great point is that a woman during the cancer period of life who flows more than usual must be thoroughly examined. This also applies to spotting between periods, after use of syringe or bowel movement.

The second principal symptom is discharge. A woman who has been free from this and at this date is taken with a discharge coming on gradually, and increasing, and especially causing irritation, ichor, itching, and pain, presents a very suspicious case. I have seen women, having this for months and even years, with an apparently healthy uterus

*Read at the Manistee meeting of the Michigan State Medical Society, June 23-24, 1908.

at first, who have finally ended with cancer.

The third symptom that I lay a great deal of stress on, is loss of weight and debility. These hold good in malignant growths, no matter where situated, but indicate already an advanced state of the disease.

All the other symptoms are of secondary importance, as you find them in different chronic and acute conditions. I refer to pain in the pelvis, the back and side, disturbances of the digestion, the bowels, etc. It is not necessary to occupy your time mentioning them all.

How can the physician make a positive diagnosis early? First, by careful investigation of every case. If you are honest and conscientious with a woman who is in the cancer period of life, and she casually mentions that she has some of the symptoms mentioned above, even if they are slight, you must immediately impress her with the need of thorough examination. If you are busy that hour you can make an appointment the next day, or as early as possible when you can thoroughly investigate her case. This question of women not submitting to examination from modesty and all that, must be swept aside. A gentleman and a physician who is enthusiastic and earnest about his work will have no trouble to get the consent of the patient, even old maiden ladies. If there should be difficulty or pain connected with it, an anesthetic should be administered, but the examination should be *thorough.*

If you find the cervix large and hard it is very suspicious. If there is a discharge or excessive hemorrhage, a curettage should be done as thoroughly as possible, and in women who have had children, it can usually be done gently and carefully without an anesthetic. I always keep some two to four dram vials in my office, into which I put the scrapings and examine them or have them examined microscopically. We must depend on the microscope, and although the microscopist might once in a while make a mistake just as we do, still we must trust him, and if he says it is not malignant we must treat the case by local application. But if the hard indurated cervix does not subside, or if the discharge continues in spite of treatment, we must again curet and again have it subjected to microscopic examination. Yes, even a third or fourth time. Malignancy is sometimes found later when it did not exist at the first examination.

If we have a case with a virgin uterus, and a discharge or profuse hemorrhage, we will often have great difficulty in making the diagnosis. Such a case should be examined under an anesthetic, the cervix thoroughly dilated and then the fundus curetted, being careful to go over the whole lining membrane with your curet, paying special attention to the cornu of the uterus. There is sometimes a place, a centimeter in size, that the curet does not reach, and the case is dismissed as not malignant. Only later, when the disease has advanced, is a correct diagnosis made. I have made this mistake myself, and, therefore, I insist on a second and third examination and curettage, if the first should give an indefinite microscopic diagnosis.

If the medical profession will be thoroughly imbued with this great idea of thoroughness in the investigation of early diagnosis, and prompt removal of local cancer, many cases will be saved from the pangs of hell and an early death, because there certainly is no disease so terrible as cancer.

No physician has a right to locally treat such cases for months and months to see if he can reduce a swollen uterus or cure a discharge unless he knows positively what the trouble is.

If a physician is not sure himself he should ask counsel. If he has not the time he can send the patient to somebody

who has. If he has not all the facilities required, he can send her to a well equipped hospital, where all the facilities are at hand to make a correct diagnosis. He will always be the gainer and not the loser by this course of action. A man who establishes in the community a reputation of being thorough and of always being correct in his diagnosis will establish for himself an enviable reputation.

But physicians are not to blame. Women often conceal their symptoms. The people are ignorant and stupid. They have had it drilled into them for generations, that profuse menstruation with those other symptoms at this time is a proper thing, and they must expect pain, backache, and all kind of trouble during the menopause.

What shall we do with them? That is where we must get the crusade spoken of. Not the crusade of the sword or the spear, and the banner or battle, but with the gentle crusade of the pen and the press; of the kind and encouraging word from mouth to mouth. We must train and educate the women of this country so that they will seek early aid, when they are suffering with such suspicious symptoms.

In order to do this it seems to me we should get out a cancer pamphlet. It ought to be published in every lay paper in the land, yes it should be advertised and published at least every year, and the day to be known as "cancer day." A circular should be issued and put into the hand of every woman of the land. Every County Society should have such a circular published (or distribute them at least) so that the laity will understand the early symptoms of cancer and that cancer can be cured by an early removal.

What holds good of cancer of the uterus can also be applied to cancer anywhere else. All tumors, swellings or growths, found anywhere in the body, should be promptly investigated, and if necessary removed.

I would suggest a circular something like this:

TO THE WOMEN OF THE LAND; WHAT THEY SHOULD KNOW ABOUT THE EARLY RECOGNITION OF CANCER.

The change of life or menopause comes on gradually, rarely suddenly. It is not preceded by excessive flowing or discharge or pain in a healthy woman.

By cancer period is understood those years after forty, although rarely it may occur earlier.

The first symptoms of cancer are:

1. Profuse flowing, even if only a day more than usual. Flowing or spotting during the interval or after the use of a syringe or the movement of the bowels.

2. Whites or leucorrhea if not existing previously. If existing, but getting more profuse, watery, irritating, or producing itching, it is a very suspicious symptom.

3. Loss of weight if no other cause is apparent. Pain in the region of the womb, back, or side.

If any of the above symptoms occur after the age of thirty-five or forty, a woman should seek prompt relief and insist on thorough investigation of the cause and prompt treatment.

Cancer is always at first a local disease and can be removed if early recognized, and an absolute permanent curé brought about.

APPEND ICITIS*

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subsequent attack might be more severe and rapid in its course, ending in death. Whether to operate during the attack or to wait for the interval was a fruitful cause of discussion; most surgeons tiding their patients over the attack if possible, only to find, not infrequently, that the interval never came; or if they operated after the symptoms became grave the patient's chances were lessened by their lower vitality. As a result there was a higher mortality, and the patients were more timid in consenting to an operation at a time when conditions were best for a successful outcome.

At the present time the predominating opinion is to operate at once in all cases when seen at the onset of the attack, and by an ever increasing concensus of opinion medical treatment has been relegated to the background. One argument against waiting for the interval to operate, in my experience, has been that very commonly the patient on getting well would refuse an operation, preferring to take his chances on another attack, rather than submit to the knife, and I think it may be stated as an axiom that no one is safe, having had an attack of appendicitis, however mild, until the removal of the offending cause. In the hands of an experienced and competent surgeon, with proper aseptic conditions, the greatest safety for the patient lies in an immediate operation if seen at the onset, or before perforation, while the pathology is still largely confined to the appendix, and the unruptured appendix occasions far less anxiety to us when in a bottle than when left in the abdomen, and we in the dark as to

One of the first in America to clearly define the relation of the appendix to inflammatory conditions in that portion of the abdomen was Dr. Fitz, of Boston, who in able papers published in 1886, and again in 1888, demonstrated that typhlitis, perityphlitis, and perforative appendicitis had practically the same cause and symptomatology. Dr. Sands, of New York City, was the first to operate for it in this country. Since that time no disease has been more written upon, nor none so frequently discussed at medical meetings. The recognition of it in its early stages has become more general, its pathology better understood, and its treatment simplified, and more successful.

The mortality following operations for it, at first high, has become so low that surgeons now report their cases by the hundred with no deaths. As a result of the increase of hospitals throughout the country, and a more perfect asepsis, a mortality as low is now obtained in nearly every locality as in the larger city hospitals.

Operations for it have become so frequent that the public have been inclined to look upon it lightly and ridicule the profession, and physicians have been heard to accuse others of operating needlessly, when in their opinion equally good results could be obtained with less heroic measures. It was long ago shown, however, that recovery from a first or second attack did not mean cure, and the patient was frequently not well nor free from pain in the interval, and a

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the course of the disease within the next twelve hours. No one's prognostic acumen is keen enough for him to say that an attack, even though mild, may not present an entirely different picture at his next visit, with perforation and a well-developed peritonitis. It has been my experience in the last two years to have two such cases, which at my first visit were not serious, each having tenderness on pressure, and but slight muscular rigidity, but no alarming symptoms, have a ruptured appendix, great pain, a distended and hard abdomen, when I saw them the next morning. Both were on the Ochsner treatment, one in the hospital, because they refused an operation. I have had other similar cases, and all have, and while such dangers may present, I do not believe we are warranted in deferring an operation.

The Ochsner treatment is probably responsible with many for postponing operating, and some physicians who do not feel safe to operate themselves, yet unwilling to turn the case to some who can, excuse themselves on the ground that so able a man as Dr. Ochsner with his immense experience advises that course. I do not believe that he meant that treatment to be applied in the early cases, but rather at that time when the inflammation has already extended beyond the appendix. I believe in the Ochsner treatment, and use it, but only in those cases where I can not get the consent of the patient for an operation, or where the conditions for safe operating and proper after care are not at hand, but I also agree with the statement of Dr. Morris, of New York, made at the last meeting of the American Medical Association, that the Ochsner treatment was one of the greatest principles in surgery, but that as generally applied in New York it was damnable. I do not believe it possible to completely carry out this treatment in any home unless there is present a competent and conscientious nurse. Too often it is only partly carried out; but when rightly used no doubt many cases may recover from the attack who would not on any other non-operative treatment. Whether to operate on a case when there is present at our first visit, evidence of the inflammatory process having spread beyond the appendix with a mass of exudate, or a beginning abscess, is a question upon which the profession are not united. Each of these cases calls upon the physician for greater experience and surgical judgment, and in deciding, each case should be judged by itself.

In the series of cases which I wish to report there have been a number of this kind and we have operated on every one as soon as diagnosed and have no reason to regret our course, and I believe in the majority of such cases that to be the safer policy, depending in large measure upon the after care. When, for any reason an operation is not done at once the leucocyte count will be of great aid, frequently giving a more correct picture of the condition than the clinical signs, as a rapid and marked increase in the white cells may develop with the clinical symptoms not aggravated or even milder. My experience with it extends over several hundred cases in my own practice and that of my colleagues of the Copper Range staff and of the Calumet & Hecla staff during my service there, and I have frequently seen the benefit of it.

I wish to refer to the operative technique and after-care of the cases operated upon by myself and my assistants at the Copper Range Hospital, since its opening in April, 1906. I have not expected to bring out anything new, but rather to emphasize certain points that in my experience have seemed important, and upon which a successful result may very much depend. The series now includes 79 cases operated on consecutively, with one death. The fatal

case was a young girl eight years old, referred to me for operation by Dr. Scott, of Houghton. The operation presented no unusual difficulties, and death was due to hemophilia. Though the wound was closed in layers there was a severe and constant oozing from it. It was re-opened down to the peritoneum and no bleeding point found, but the oozing from every part, which firm closure failed to control. There was also severe epistaxis, and ecchymoses in the back and on the legs. Death finally occurred on the eighth day. This case was reported to the Houghton County Medical Society, a year ago.

The operative technique we have used has been as follows: Ether has been the anesthetic in every case. Thorough asepsis has been followed in every detail; in the preparation of the patient's abdomen, the doctors' hands, suture material and dressings. Rubber gloves have been worn, carefully drawn over the long sleeves of the operating gowns, and the hair and face of the operator and his assistants covered. The incision in most cases is the McBurney, though in women, when an examination of the ovaries may be desired, the right rectus is chosen. The appendix is dealt with by the Mayo method, a ligature of catgut at its base, the stump invaginated by a purse string of celloidin linen and reinforced by a few Lembert sutures, and the stump of the meso-appendix brought over and anchored, leaving no raw surface. The incision is then closed in layers with No. 2 catgut, and the skin edges brought together either by a subcuticular catgut suture or buried silver wire. The dressings are simple, a few gauze sponges held in position by three strips of adhesive plaster.

In the cases where there is an abscess or a general peritonitis, the appendix is always removed if possible, by not too long prolonging the operation, and only twice have we failed to get it, deeming breaking up of adhesions and further search unwise. We have used drainage in very few of the septic cases, though where there is a distinct abscess cavity a rubber drainage tube is always introduced. In the others, however, where there is pus, inflammatory exudate, and no attempt at walling off, we have in some of the cases closed the wound without any drainage. All of these had an uneventful convalescence, except one, a five-year-old child, who was very unruly. This case recovered. I believe drainage may be limited to those in which there is a very large amount of thick pus. Our series of cases is far too limited I know to prove any rule, but I believe drainage when not used judiciously, often does harm. In the cases of general peritonitis, with the abdomen more or less filled with pus and the intestinal loops agglutinated, I question if the tube removes much of it, and gauze less, and believe that sometimes such cases, if the wound is closed and the patient set up perfectly straight in bed, may stand a better chance of recovery.

We have made but little effort to remove the pus at the time of operating, and the intestines have only been handled enough to remove the appendix. Flushing of the abdominal cavity with hot salt solution I consider bad practice, as the toxines are by it rendered more absorbable and the already poisoned patient is overcome by toxines. All these measures, also, by prolonging the operation added to the increased shock from handling the intestines, decrease the lowered vitality of the patient, and lessen his chance to a large extent. For several years it was my practice and that of others in every case of suppurative peritonitis to make a free incision, to mop out all the pus we could, breaking up adhesions to do so, then flush the abdomen with salt solution, and finally to carry strips of gauze to the seat of

the appendix and into the pelvis, in several cases making another incision for better drainage. Such operations were necessarily prolonged, and the patient returned to bed in great shock. I do not remember any of those cases having recovered. We have had four such cases in this series all of whom have recovered. The operations, by being briefer, have occasioned less shock and the patient has been spared a maximum of vitality to aid his recovery.

One of these cases I will refer to: Mr. P., a young man, and a miner by occupation, called me to attend him February 1, 1907, and a diagnosis of appendicitis was made and operation advised. He refused, however, and the Ochsner treatment as far as possible at his home was carried out. When I saw him next, the following morning, I found him in great pain, the abdomen distended and hard, and all the symptoms of peritonitis. At operation pus was found in the abdomen, the intestines partly covered with inflammatory exudate, the appendix swollen, ruptured, and free from the protection of adhesions. It was readily removed and the wound closed without drainage, and the patient sat upright in bed on removal from the operating table. There was a skin infection in this case, which caused a rise in temperature for a few days; it was not deep, and was drained by removing the lower suture. Otherwise his convalescence was uneventful, and he was up and about the ward in the third week, going home on the 21st day and returned to his work within the month.

The after treatment of all cases I consider of great importance. The patient is always put in the Fowler position, the head of the bed being elevated 22 inches. Nothing is given by the mouth, not even water, for the first 24 or even 48 hours, but four ounces of salt solution is given every four hours per rectum. Morphine is given hypodermically after the patient awakes, if needed for pain or restlessness. Very rarely is a cathartic used until the bowels have first been moved by a simple enema, which in most of the cases has been given on the fourth day. We have had practically no post-operative nausea or vomiting, and no trouble from gas in any case except one, a man aged 56, who had symptoms of paresis for two days. Most of the cases sit up on the fifth day and go home on the seventh or eighth day. In my judgment the Fowler position is the most important point in the after-treatment of our abdominal cases, and the recovery of some of the more serious ones, with freedom from post-operative vomiting, distress from gas, and the very comfortable convalescence is due largely to it. The patient is easily and comfortably kept in that position, and only one of over 150 cases in which we have used it has complained, and only once were we unable to keep the patient's position so for a few hours on account of the pulse rising, but I believe that patients in that position have less shock. By favoring drainage into the pelvis, toxic material is more slowly absorbed and there is less danger of the patient being overcome by it. Even in non-septic cases the irritation of the peritoneum by handling the intestines favors serum being thrown out, or there may be a few small blood clots which are absorbed in this position. I have noticed for some time the freedom from vomiting in this position, and have concluded that it was the cause. That I might have facts to prove my statements I asked my head nurse to go over all the history sheets of last year in regard to vomiting after all cases operated on. This included 100 cases, and I have the following interesting figures:

There were 52 cases who were not in the Fowler position, which were non-abdominal ones, of these there was free

emesis in 39 the first 24 hours after operation, none the second 24 hours. In ten cases there was slight emesis the first 24 hours, and in three no emesis; 48 cases were in the Fowler position with the following results. In 44 cases there was no emesis at all, in two it was free for 24 hours, and in two for 48 hours. The cases kept in the Fowler position were the ones in which the operation would as a rule be longer and in which vomiting would be most likely.

The relation of chronic appendicitis to gastric symptoms was strongly impressed upon my mind at my first visit to the Rochester clinic two years ago, at which time I saw a man giving the history of intense pain in the region of the stomach, with vomiting and a loss in weight of 40 pounds in a few months. Before operating, Dr. Will Mayo did not make a positive diagnosis, but suggested that the appendix might be the cause of the attacks, though there were no symptoms pointing to it. Through the usual incision he brought out the stomach and carefully examined it, also palpated the gall-bladder and pancreas, but found nothing pathologic with any of them. After closing that incision he made another over the appendix, and removed it. It was long, bent on itself and bound down. I never heard what the result of the operation was, but Dr. Mayo assured us the man would be free of his attacks in the future. Last winter we operated on a man with the following history: The year previous he had an attack of appendicitis which kept him from work three weeks, but for which he was not operated. Since that time he has had no subsequent attacks, but has had much trouble with his stomach, with pain and discomfort after eating; he has been forced to stay from work a day or two frequently, had lost strength and was miserable. Medication had relieved his dyspeptic symptoms for only short periods. An examination showed tenderness on pressure over the appendix, and its removal was advised. When I saw him last, several weeks after the operation, he had gained flesh, could eat anything, and presented an entirely different picture, and he has remained well.

I have been told on several occasions by people who have had their appendix removed, that a more or less persistent indigestion which had troubled them before the operation had disappeared after the removal of the appendix. I have operated on two cases in which the symptoms were entirely gastric, in one more that of dyspepsia, in the other severe pain in the stomach, an analysis showing only slight hyperacidity, but neither case giving the history of previous appendicitis. In both cases were all symptoms relieved by an appendectomy. In one of the cases having the severe pain I examined carefully the stomach and gall bladder through a high incision, and they were both normal, showing that the pain was not due to gall stones. I believe such cases as these, giving a history of indigestion, or severe pain in the stomach, with a tendency to chronicity and only temporary relief from drugs and dieting, with no definite symptoms of ulcer or gall stones, particularly if there be tenderness at McBurney's point, which may be elicited when there can be obtained no history of an attack of appendicitis, will be afforded relief by the removal of the appendix, and it will be considered good practice to advise it. The future will show little use for the stomach specialist, and that all obstinate cases of stomach disorder should have an exploratory operation, and that many of them will be given relief by the removal of the appendix and less discredit will be brought on the profession.

In conclusion I would like to emphasize the following points in the management of appendicitis.

1. Immediate operation when seen early in the attack.
2. Thorough asepsis.
3. Closure of wound in many cases, formerly thought necessary to drain, and
4. The Fowler position in every case.

ANESTHETICS, WITH ESPECIAL REFERENCE TO SOMNOFORM*

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From the earliest ages of antiquity man has sought continually for means of relief from pain. Running all through medical history there is a constant reference to the abolishing of pain, and among the ancients there were many fairly successful attempts in that direction. Poppy, henbane, mandragora, etc., were used to deaden the pain of executions and surgery. Herodotus speaks of it. Amputations were done in China, A. D. 220, under hashisch. Pliny in the first century of our era, wrote of the custom of giving drugs to prevent pain in cuttings and puncturings. There are hosts of agents from hypnotism to puffballs, which will produce anesthetic sleep or local anesthesia, but at the present time the general anesthetics are practically limited to chloroform, ether, and gas. These three, discovered many years ago, and, singularly enough, either discovered, brought forward, or demonstrated by dentists, have not been displaced.

New ones have been sparingly advanced, ethyl chloride, ethyl bromide, pental, bichloride of methane, ethyloform and a great many others, among which we must not forget Abbott's H. M. C. tablets; each one introduced by some one who happened to be an enthusiast in regard to it, but none standing up as are the old original three. You perhaps know the history of the principal anesthetics. Ether was discovered in 1540, used in 1803 by inhalation for the relief of the cough of tubercular patients. In 1830, a negro boy was anesthetized. In 1842 Dr. Long used it successfully in excising a tumor, and received the munificent sum of $2.00 for the work. In the same year Morton gave it for the extraction of a tooth. In 1846 he demonstrated it in the Massachusetts General Hospital, and it became an assumed fact as an anesthetic.

In 1847, chloroform came into the field for the same purposes as ether, having been discovered in 1831 by three investigators in three different countries. But the spectacular career of ether and the prominence it had obtained made chloroform less of a wonder, and it never obtained the favor of the former, especially in the old world. In 1779 the intoxicating properties of nitrous oxide gas were discovered by Humphry Davy, then a young practitioner. In 1818 Faraday observed that the vapor of ether produced effects similar to that of nitrous oxide. In 1844 a traveling lecturer gave an exhibition of gas. It was then used in Hartford to some extent, but at a demonstration calculated to prove its worth it was improperly given and was deemed a failure and was soon overshadowed by the prominence that was then given ether, only to be studied,

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perfected and used for minor work in later years.

Since this period the greatest changes and discoveries among other drugs and drug properties have been made. Medicine has advanced by enormous strides along other lines, but practically little new has been done in anesthetics, except to learn more perfectly their action and better methods of using them. Although the increasing interest in the various methods of using anesthetics is interesting, and shows the development of the art into almost a special department of medicine, it would seem only natural that newer and possibly better remedies might be discovered along the line of anesthetics, as well as along other lines during this long period.

Lately my attention has been called to the new anesthetic, somnoform, and so favorably have I been impressed with its several good qualities; its apparent safety; its rapidity and pleasantness; its freedom from all unpleasant after effects, that I wish to call the attention of the section to it. I am well aware that the small number of cases I have personally to report does not count for much, but they have been enough to make a profound impression on me, and I hope that others will at least investigate, feeling sure that if they do follow it up they will be satisfied with the results obtained. It is with some hesitation that I speak about somnoform. A proprietary preparation as a rule we "fight shy of;" "we have to be shown." However, many articles of great merit have been introduced by this method.

Probably if we were to ask nine out of every ten of the physicians of this country, "what is the best anesthetic," the reply would be "ether." There is no doubt that ether may be the best in many cases, but the best anesthetic is always the one best suited for the particular case in question, and so no anesthetist should become wedded or tied down to any particular kind. Is an anesthetic safe? That depends primarily on who gives it. Some one has said that in certain lines man is born an adept, not made; this is certainly true with the anesthetist, though practice and experience are essential. He should be able to devote his whole time to this work. His is fully as important a position as the operator's or the assistant's. He should have time to study the patient, so as to be able to decide which anesthetic is best for each case.

Somnoform is composed, as stated by the manufacturers, of ethyl chloride 60%, methyl chloride 35%, and ethyl bromide 5%. It is a transparent and nearly colorless liquid, usually coming in glass tubes or capsules containing 3 or 5 c.c, but can be obtained in larger containers, when much is to be used or where it is not necessary to transport it from one patient to another. When these capsules are broken a very volatile gas results, which when inhaled produces the narcosis. It was discovered in 1895 by Dr. Rolland, of Bordeaux, France. Dr. Rolland is dean and professor of anesthetics in the dental school there. He had been investigating and experimenting for several years, principally with different combinations of old and new anesthetics. Since this time its use has become quite general, but more especially among the later dentists. Comparatively few surgeons, so far as I know, at least in this country, have had their attention called to it. It may be thought by those who have been using ethyl chloride that that is all there is to somnoform. I have been using the former for minor operations and preliminary to other anesthesia for three or four years, but I can freely say that there is a vast difference between the two. Somnoform has an even more prompt action, said to be due to the rapid diffusibility of the methyl chloride. The anesthesia is more rapid, more prolonged and there is a period of

analgesia following the return to consciousness during which short operations can be completed. Its inhalation is more pleasant. It leaves no unpleasant after effects. Compared with nitrous oxide we find it more pleasant, fully as rapid, giving no cyanosis, longer anesthesia, and less often the excitable period; no heavy or cumbersome apparatus to carry around. The frequent rigor, struggling, and cyanosis of gas are very disquieting to an operator who is not accustomed to its use. Nitrous oxide causes first a rise of arterial pressure (from vaso-motor stimulation) then a fall, (vaso-motor depression) a slowing of the heart, then a more rapid beat. This, according to Hare, is due to a moderate asphyxia. The use of nitrous oxide with oxygen or with ether has its place, and a very important one, but again the present cumbersome apparatus makes it unavailable in the class where it must be used in the home.

Somnoform seems to me undoubtedly safer than chloroform and ether, and fully as safe as nitrous oxide, which has always been called the safest narcotic we have. So far, its use has been mostly confined to minor work requiring short periods of anesthesia; there seems to be no reason, however, why it should not be used for more prolonged work. It is more pleasant, consequently easier to inhale; is very rapid, the patient comes out quickly with but little nausea or unpleasant after-effects. It has been used for 30 minutes with practically no change in the pulse, respiration, or blood pressure. In ether there is admitted a slight loss of hemoglobin, a medorate polycythemia from blood concentration, and slight increase of leucocytes, these changes lasting about 24 hours. In chloroform these changes are similar, but more marked and persist longer. A recent author has said "anesthetics, especially chloroform, can produce a distinct effect on the cells of the liver and kidneys and on the muscle cells of the heart and other muscles, resulting in a fatty degeneration and necrosis similar to phosphorous poisoning." Chloroform is usually charged with about one death in two or three thousand cases, though the rate is probably less now. The old high rate which was given both it and ether in the civil war, we of course now know should have been divided with shock as a cause. The latest figures I have found are from Bevan and Lexer, who gave in 524,507 cases of chloroform one death to 3,258 cases and in 31,473,821 cases of ether one death to 14,987 cases. There were 90 published cases of death from chloroform in England in 1897. There is a vast difference between deaths under, and deaths from an anesthetic, but this is taken little into account when we look up the statistics. For instance, in 1847 arrangements were made in the Royal Infirmary in Scotland for the demonstration of chloroform. For some unknown reason the anesthetist, Simpson, did not appear, and the operation was completed without the anesthetic, and the patient died. Had this case died while under the anesthetic it might have been the death blow to that drug. Two days later the test was completed on another patient with great success. A case somewhat parallel to this occurred in Columbus recently. A woman who three weeks before had taken somnoform with success, came in to have a piece of root extracted. She spoke of a feeling of dread and hated to take the somnoform; as the operation was trival the dentist did not try to use an anesthetic, and she died in the chair. Such cases simply prove that large numbers of tests are needed before any reliable statistics can be had.

Experiments show that to get the same effect as chloroform on the heart it took 12 times as much ethyl bromide, 48 times as much ethyl chloride, and 192 times as much alcohol. I have found no such experiments comparing it with somnoform.

The amount of chloroform or of any anesthetic in the blood bears no relation to the anesthesia. It depends on the quantity which acts on the central nervous system, hence the danger of giving a large quantity is the danger of getting an excess in the blood and getting a cumulative effect. Those which are rapidly diffusible show their action sooner, and we are not so apt to get these effects. Such ones are somnoform, ethyl chloride, gas, etc., but in the first two the narcosis is produced independently of asphyxia; this cannot be said of nitrous oxide, hence we should naturally conclude that the use of the former agents are more physiological and now if this claim of non-hightened blood-pressure continues to be substantiated it would seem to be safer than gas for old people with hardened arteries. We await only more confidence to use it in longer operations.

There is much controversy as to whether the heart is ever directly affected in either ether or chloroform poisoning, or whether the dangerous symptoms are not always due to failure of respiration. The evidence is of a very conflicting nature, and it is impossible to consider the question solved. Ether is a cardiac stimulant, and we would expect an increased blood pressure, but what we get in both ether and chloroform is lowering due to vagus inhibition. We all know the reports of the Hyderabad Commission were not satisfactory to a great many who believed and still believe that in death from chloroform the heart fails first, and that in ether anesthesia the respiration fails first.

In a report by Dr. Turnbale of deaths from chloroform and ether since the above commission, he concludes that the blood is changed in character, lowered in pressure, with weakened heart action and structural changes. Dilatation of the heart occurs at all stages and on both sides of the heart. In 13 cases out of 43 there was cardiac failure first. The heart may stop first with ether, but usually it is the respiration, these changes are liable to follow the first act of respiration. In 1896, there were reported 30 deaths from chloroform in dental chairs. Ether is estimated to be seven times less dangerous than chloroform.

In regard to somnoform, I have been able to find but little in either text books or current literature, but most of what there is is favorable. The Long Island Society of Anesthetists discusses ethyl chloride quite fully, and speaks favorably of somnoform, but little seems known except by those few who have made a study of it. Some English works speak unfavorably of it, but give no experience with or unfavorable reports of it. Thus Luke says: "There is no advantage over ethyl chloride and its popularity is waning." Rose and Carliss state, "Somnoform has no advantage over ethyl chloride and is probably less pleasant to take and leaves more after effects." I think these statements show a somewhat unreasonable prejudice. Luke says also that gas anesthesia is not due to asphyxia, though most Americans assert that it is. It seems proven that gas, even though given with oxygen, displaces the latter in the corpuscles, and thus gives the same asphyxia as if there was an absence of oxygen. Patton says, "Somnoform is supposed to be governed in its entry, transit and exit from the body by much the same condition as those affecting the action of oxygen. It increases arterial tension and rate of the heart, is said to produce changes in the neuron which vary in different portions of the same brain." He quotes Gray of Melbourne, and Cole, who speak favorably of it.

Compared in any other way except duration of anesthesia, somnoform seems to me without a doubt far ahead of any other anesthetic we possess. As to safety it is claimed that there have been two

deaths in 800,000 anesthesias, and that these were not normal cases. One of these deaths occurred in Grand Rapids, and one in Rockford, Ill. I have not been able to get many particulars regarding these cases, and doubt if they have been reported. One died one-half hour after the operation; is said to have had spells of collapse before and to have made previous attempts at suicide. The other case died in a dental chair. Other cases of death in this country reported as somnoform are claimed to be from ethyl chloride. Two deaths also from somnoform are reported across the Atlantic.

Rarely ever are there symptoms which are disquieting when one learns to know the agent. Dr. Rolland reports 25,000 administrations without an unpleasant symptom. One would here make a little allowance for the natural enthusiasm of the inventor; what would not be a disquieting symptom to him might be very much so to one less acquainted with the action of it. But when we read of 50,000 administrations given by dentists and others all over the country, many of them men who no doubt have had no special education in anesthesia, perhaps who have never seen it used before, when we get this kind of a report from all kinds of operators without a death, and with almost universal praise, it seems that there must be something extraordinary about it. Ought we not to "sit up and take notice?"

According to the manufacturers up to March a year ago, these four deaths have occurred in 1,000,000 administrations to patients from 2 to 80 years, and with no manner of classification of what the cases were or what kind of men had been using it. Since then I have been unable to find any deaths recorded. During this time there have been 18 deaths recorded in the journals from ethyl chloride. The latter, by the way, is not so very new, as it was used first in 1848. In 1880 a commission from the British Medical Association condemned it, and in 1895 reintroduced it. It does not, as a rule, cause complete muscular relaxation.

These may sound like extravagant statements; some of us dimly remember to have read of occasional fatal cases, to have heard that it was so extremely rapid that it was correspondingly dangerous, to have been told or to have understood that it was nothing but ethyl chloride, etc. Only strong and repeated assurance induced me even to give it a trial, and when I finally did, in the first few cases the least uneasiness on the part of the patient was a cause for alarm and coincident uneasiness on my part; conditions to which I would hardly give a second thought in chloroform or ether would frighten me in this, but I finally came to have much confidence in it and to think that the few bad cases that I had read of, might have, as the somnoform people claimed, been widely published and made much of by those who were interested in other anesthetics. Dr. DeFord, who has recently published a book on general anesthesia, gives great praise to somnoform. He reports only ten cases of nausea in 4,000, where blood is not swallowed. Dr. C. M. Paden, who has made a considerable number of laboratory experiments with somnoform to ascertain its exact action, finds in short that it is not a depressant. The pulse and respiration are at first stimulated and then remain normal even after extended use. Heightened blood pressure by nerve stimulation during anesthesia returns immediately to normal after cessation of the stimulant. In animals, where it was pushed to the limit, death was always from failure of respiration, though often enormous amounts would have to be used, and artificial respiration would usually bring the animal to life, the heart beating for some time after the respiration had ceased. After 30 minutes of deep anesthesia the animals

were usually in a satisfactory condition. In experiments on himself (and all these experiments were made in the presence of a number of scientific and non-interested men) using the sphygmomanometer instead of the direct blood pressure from the femoral artery, all the phonomena seemed to be repeated.

In short, then, we seem to have this: a safe article; a very rapidly acting one; one giving a longer anesthesia than gas and one which can be continued, but the length of time being unknown; one which can be transported easily; one causing practically no nausea or unpleasant after effects; one which we can use in more different conditions than any other; one which is par-excellence to use preliminary to one of the other agents.

There is a special inhaler made for somnoform which is very simple, and is so arranged that the anesthetist can at will regulate the amount of air the patient is getting. The face-piece is so arranged that it can be easily detached from the other parts, and used to continue with some other anesthetic if wished.

Reports of Cases.

Baby C, female, aet. 4, abscess cervical gland. Feb. 18, '08. Had to use two 3 cc. tubes as the face was so small the mask did not fit it, allowing too much air. Narcosis was perfect; opened a large abscess, washed and drained it and dressed the neck. Child came out quietly, had no nausea or nervousness; knew nothing of the work.

Feb. 19, '08. Mr. T. P., aet. about 40, given in dental chair. One tube 3 cc. taken nicely though a little nervous. Six teeth extracted without pain or trouble; probably we could have gotten more had we known enough to know that we were not hurting him. After a few moments gave another 3 cc. but only managed to get one root and this he claimed with pain. Was very nervous with the last tube and did not breathe well, but exhibited no bad symptoms; no nausea.

Feb. 19, '08. Mrs. G. B., aet. about 30. Without an assistant 3 cc. was given and an alveolar abscess from a diseased tooth was incised. Not quite all the amount was used, thinking that she was fully under. She cried loudly, but said there was no pain and that she knew nothing of it. She recovered immediately, with no trouble or nausea and felt well. This was an extremely nervous person, has had a great deal of pelvic trouble and a major operation and is a morphine habitue.

Same date. Mr. C. W., aet. about 25. This patient had a large axillary abscess and another on the arm, both following vaccination. He had been suffering great pain for two nights and was very nervous from loss of sleep. In addition he had just eaten a big supper. Just as he was going under, the assistant allowed him to knock the inhaler on the floor. It came apart, and before I was able to get it together he was out. There was a dim light in the evening and a crowd of friends that made it worse to get him composed and under, and I used three 3 cc. tubes. There was much struggling and rigidity until he was under, then both abscesses were incised and dressed and he came to immediately with no remembrance of anything and loud praise for the easy and pleasant anesthesia.

Mar. 3, '08. Mr. T. P., in dental chair, same as case No. 2. Under one 3 cc. tube two roots and a large molar were removed with no pain or knowledge whatever. He was nervous and did not breathe it well, going under it slowly.

Mrs. D. P., aet. 39 (wife of the above), in dental chair, under one 3 cc. tube had four bad roots removed. Though she is very nervous she is a fine patient and was a perfect success in every way. This patient has a weak heart and has been in poor health for some years.

Mrs. B., aet. 24. In the office with no assistant one 3 cc. tube was used with most perfect results. She slept easily and naturally, without any excitement. A vulvo-vaginal abscess was incised, thoroughly cleaned, and dressed. She slept about two minutes longer and awoke perfectly natural; had no nausea.

April 19, '08. Mr. M., aet. 63. In dental chair. Used one 5 cc. tube; seven teeth extracted with most beautiful results. No trouble of any kind and there was time to have done considerable more work.

April 28, '08. Mrs. H., aet. 22. One 5 cc. tube used partly to open a felon. As in the last case the result was perfect, two incisions were made to the bone, which was slightly scraped, the wound was dressed and there was time to do more. Not the least nervousness or trouble of any kind.

May 25, '08. Mrs. E. M., aet. 19. Here an attempt was made at a more continued anesthesia, but the patient was on a bed and lying on her face, and with no help it was found impossible to keep the bag filled with gas, any movement pushing apart the bag or pressing the gas from it. Patient went under in a half minute. Used three 5 cc. tubes, keeping up a very satisfactory anesthesia for 12 minutes. Then on account of the annoyance of the position, changed to chloroform without any awaking and used one dram of it for six minutes more. There was some stertor and strabismus, but no disquieting symptoms. The case was one of a sinus over the coccyx and sacrum. A rectal and vaginal examination was made, the sinus probed and laid open by a 3-inch incision down to the bone. Careful examination of it was made and it was then washed, packed, and dressed; patient wakened a little later. Slight nausea and straining.

June 12, '08. Mrs. W. M., aet. 40. In dental chair. One 5 cc. followed at intervals by three more 3 cc. tubes. Eleven teeth were extracted with much difficulty, most of the incisors breaking and coming very hard. She was slightly restless in taking it, moved and cried a little at times and seemed waking. With the last tooth she was conscious and obeyed my direction to hold still and open her mouth, but afterward said she did not know it and had no pain. She recovered without nausea and in a little while walked home.

June 18, '08. Mr. J. W. M., aet. 65. In dental chair. One 5 cc. tube partly used, seven teeth and roots removed. Patient went under in one minute, lasted two minutes longer. There was a little restlessness at first. After coming out, complained of a little headache but no nausea.

June 26, '08. Mrs. N. S., age 44, looks very pale and anemic. In dental chair complete time, 4 minutes, one 5 cc. tube, went under in one and a half minutes, removed 13 teeth, then she began to recover, gave her a few breaths of another tube and removed the balance, five very easily. She swallowed some blood and vomited a little once. She seemed awake between the two administrations, turned over in chair and answered questions, but knew nothing of it on recovering.

July 21, '08. Mrs. G. B. (same as No. 3), on table in office, used one 5 cc. tube; under in one minute, did not use full amount as only one tooth was to be removed, but it was so decayed had to use a second tube. She came out between the two, so that she remembered it, but had no pain. Had no mouth gag, which caused some delay; whole time 5½ minutes, tooth not out.

Aug. 25, '08. Same patient; one 5 cc. tube used for the bicuspid root which was left; used part of second tube before she seemed to be under.

[Repeated administrations may render patient able to take more for same effect.]

Nov. 2, '08. G. C. H. (myself), one 5 cc. tube; very nervous and struggling all the time, but it was very pleasant to breathe. Had 4 teeth out and fifth one broke, did not have time to get more. My first sensation was of pain in left side below heart. No bad results. I would not hesitate to take it again.

Aug. 9, '08. H. M., age 22, tubercular abscess of thigh; one 5 cc. tube, not all used; under in one minute, incision and examination; total anesthesia 3 minutes. Perfect action and result.

Nov. 16, '08. M. S. For examination of tender kidney, one 5 cc. tube; subject extremely nervous, but when under, examination was easily made. Showed enlarged and misplaced kidney. The intense muscular rigidity changed to a flaccid condition. Condition was probably stone and pyo-nephrosis; slept long enough for good examination and about two minutes longer, then awoke easily and in good condition. Time was not taken.

Dec. 28, '08. H. D. O., farmer, age 71; one 5 cc. tube. In two minutes from time he began to inhale, five teeth were extracted and there was time for as much more work to have been done before he came out. There was no excitement or trouble of any kind, although he was a very nervous person. He has a rather large goiter and some years ago had rather bad exophthalmic signs; after treatment with galvanism he became much better.

Jan. 11, '09. Mrs. E. B., age 36, palmar cellulitis, two 5 cc. tubes, first one leaked, second only used a little of. Two incisions and dressing, a little nervous on coming out and slightly nauseated, about three months pregnant. No bad result.

Jan. 27, '09. Mrs. C. G.—Palmar abscess, one 5 cc. tube used at her home, abscess incised thoroughly and drained. The action and effect was all that could be desired. Time not taken.

[Since writing the above I have heard, though I have had no opportunity to verify it, that Dr. Roswell J. Park and Dr. M. D. Mann are using somnoform with excellent results.]

ACUTE TOXEMIA AFTER CHLOROFORM ANESTHESIA*

F. W. HEYSETT, M. D.,
Freesoil.

The subject of this paper, the late poisonous effects of chloroform, is one which should be of the greatest interest to every practitioner of medicine and surgery, and yet it is a subject which gets hardly a passing notice in our medical literature today.

The dangers of chloroform during the induction and maintenance of anesthesia have long been known. The contraindications to the use of chloroform have been thoroughly studied and discussed. The possibility of nephritis or pneumonia following its use is a matter of common knowledge.

Laboratory experiments, from Nothnagel's in 1866, to Benno Müller's in 1905, have proved that chloroform, and to a lesser degree other anesthetics, produce fatty degeneration and necrosis of cell tissue, most marked in the liver, but found in the kidneys, heart, and other organs.

Deaths due to the late poisonous effects of anesthetics have been reported and published. Yet in spite of all this knowledge how many were there in our profession five years ago, who did not consider his patient out of danger from the anesthetic when he had recovered from its primary effects?

The subject of chloroform poisoning has been studied from many points of view, yet it remained for Bevan and Faville in 1905 to collect the mass of published data, and comparing and weighing facts from the various reports, show that there was a definite toxic condition associated with fairly constant symptoms, sometimes ending in death, due to the late poisonous effects of chloroform and other anesthetics.

The symptoms of this toxemia appear from ten to one hundred and fifty hours after anesthesia. During this interval the patient may feel quite well. The change comes quickly. The patient feels distressed and anxious, makes queer speeches, grows very restless, wakes up from sleep frightened.

Vomiting begins and continues nearly to the end. Restlessness increases, and the patient shrieks as in fear. A condition of sleepiness, broken by maniacal delirium and convulsions, follows. The skin becomes jaundiced and the breath takes on the sweetish odor of acetone. Somnolence deepens into coma, and the convulsions lessen in frequency and severity. The muscles are constantly in a spastic condition. Noises, pressure, or attempted movements of a limb start a slow spasm of the muscles. The urine is scanty, contains acetone and allied bodies, and is loaded with the products of liver degeneration and kidney inflammation. There is cyanosis with labored breathing of the Cheyne-Stokes type. At the height of the poisoning the walls of the capillaries may give way and we have hemorrhages from the mucous membranes and into the skin. The temperature increases, the heart beats more rapidly, the breathing becomes shallower, and the coma deepens to death. This is the picture of a fatal case.

You all have seen cases of a milder type after prolonged anesthesia, cases with persistent vomiting, great restless-

*Read before the Michigan State Medical Society at Manistee, June 23-24, 1908.

ness, of mild delirium, followed by drowsiness, together with slight jaundice, and irregular fever, for which no adequate cause could be found.

These cases have been blamed to nearly every thing but the true cause, the anesthetic.

There are certain conditions that render the patient more liable to this form of poisoning. Twice as many females die as males. Two-thirds of the recorded deaths have been in children under ten. Recent anesthesias add to the danger. Starvation, hemorrhage, anemia, carcinoma, diabetes, gangrene, sepsis, liver diseases, in short any condition of exhaustion or intoxication which lessens cell resistance, any state of disease or disability of the liver may predispose to this toxemia.

The primary cause of this trouble is the chloroform circulating in the blood. This chloroform causes a parenchymatous inflammation evidenced by fatty degeneration and necrosis of the liver cells principally, and in lesser degree of the cell structure of other organs. The liver is the organ most affected and is found post mortem in all stages of fatty disorganization. The poisons causing the symptom-complex described here are in all probability toxins derived from the disintegrating liver cells, together with substances which these same cells should eliminate or destroy.

The following is the report of a case seen in consultation with Dr. Kirkbride in September, 1906:

Miss V. W., aged 19, a robust, healthy girl, was taken sick Sept. 2nd. She complained first of pain in the left abdomen. Later the pain shifted to the right abdomen and localized over the appendix. On Sept. 8th increased resistance over the appendix was noted. From the beginning of the illness until Sept. 10th the heart beat steadily from 108 to 110 and the temperature ranged from normal to 100° F. On Sept. 9th an abscess was plainly palpable, and the patient seemed in good condition. We advised operation and opened the abdomen, Sept. 10. The anesthetic used was chloroform and the patient was under its influence about one-half hour. Dr. D. informs me that the patient went easily under the effect of the anesthetic and that it required little chloroform to maintain anesthesia. She recovered from the immediate effects of the chloroform rapidly. A short time after awakening she said she felt well and had no pain.

At midnight, about thirteen hours after operation, she went into a condition of apparent collapse. Vomiting commenced and the skin grew cold. The axillary temperature dropped to 95° F. The patient was restless, seemed distressed, and complained of the heat. Hot packs were applied and in one-half hour she was warm and sweating, with a temperature of 101° F. and a pulse still 108. During the remainder of the night the temperature zig-zagged between 101° and 104°. Sept. 11th at 9:30 a. m. the temperature was 103, pulse 110. Patient was worried about her condition and restless. At 1:30 p. m. she was still more restless. At 3 p. m. restlessness had increased and she attempted to tear away the bandages. At 4 p. m., sixteen hours after the onset of symptoms, she seemed greatly frightened and screamed shrilly at the top of her voice for a few minutes, then subsided into a comatose state, from which she never fully roused.

Saw the case at 4:30 p. m. Her temperature was 105°, pulse 156, respiration 50. Cold sponging quickly reduced the temperature to 103° and pulse 136. The temperature continued to drop until it reached 99.2° and the feet and hands became cold. Hot applications soon warmed the extremities and the temperature began again to rise. This seemingly causeless rise and fall kept up until the immediate rise before death.

The respiration was of the Cheyne-Stokes type labored at first, but shallower and quieter toward the last. The pulse was small, weak and irregular. The coma was not deep at this time and the patient could still swallow. She had at times spasms affecting the wrist and ankle joints and at others general convulsions. There was at all times a spastic condition of all the muscles. Movements of any part of the body were resisted. Any sharp sound, any skin or muscle irritation would start a slow spasm. General reflexes were increased but slow. The pupils were widely dilated and little sensitive to light. There had been vomiting at intervals since the first collapse. The vomitus now became black in color. The bowels had moved three or four times a day since Sept.

7th. The passages were now partly yellow, partly black. Later there was a discharge of bloody mucus from the vagina, also capillary hemorrhages into the skin. There was some general edema. The skin of the neck and face was especially puffy, and there was a generalized deep jaundice. The tongue remained clean during the entire illness. There was after the incision neither pain, general abdominal tenderness, nor distension. The urine was acid and of high specific gravity; some albumen was present; it reduced Fehling's reagent, but the fermentation test showed an absence of sugar. Acetone was present (iodoform test), and a trace of diacetic acid (Gerhardt test). Bile pigments (nitric acid and iodine tests) and blood (guaiac test) were found.

Microscopical examination of the urine showed granular, epithelial, and blood casts, and many blood cells. The vomit contained blood cells and clots, some of the clots seemingly bile stained.

All measures of treatment at hand which seemed to offer any hope of relief were tried. Heart stimulants were given hypodermically. Physiological salt and sodium bicarbonate solutions were introduced freely, both into the colon and under the breasts. In spite of all, the coma deepened, the convulsions subsided, the breathing grew shallower, the heart weaker, and the patient died about nineteen hours after the onset of coma.

The patient just described was one of those, happily for us, rare cases who are unable to withstand the toxic influence of even a moderate dose of chloroform.

I firmly believe that had a local anesthetic been used, or had ether been employed, that the patient would have made an uneventful recovery.

Conclusions.

Our study of the various anesthetics has brought us to the following conclusions:

Local anesthesia should replace the general anesthetic wherever possible.

For minor operations nitrous oxide is the safest general anesthetic. Nitrous oxide given with oxygen may be the anesthetic of the future.

Ether, chloroform, and bromide and chloride of ethyl all produce poisoning, as evidenced by inflammation and fatty change in the internal organs. The amount of fatty degeneration is in direct ratio to the power of the anesthetic used. Ether, our least powerful anesthetic, is therefore the safest, and unless absolutely contraindicated, should be the anesthetic of choice.

The severity of the poisoning is in direct proportion to the length of time of anesthesia and to the amount of anesthetics used.

Therefore every effort should be put forth to shorten the time of operation and to lessen the amount of anesthetic given.

Chloroform should be especially avoided in conditions of debility and in liver insufficiency from any cause.

In closing, I will call your attention to the advance report of the Anesthesia Commission of the American Medical Association, read at Chicago. The main points as I remember them, were as follows:

Nitrous oxide is the safest general anesthetic.

Nitrous oxide and oxygen is a promising combination.

For the general practitioner ether by the drop method is the safest general anesthetic.

Chloroform is a dangerous drug, and its use by the general practitioner should be discouraged.

How much success attends the appearance of the doctor as relates to personal habits, condition of clothing and cleanliness is estimated from the discussion these things receive in social circles. In these days of septic infection and chemical cleanliness, thinking people observe critically the need of nail brushes and laundry. Dirty or shabby clothing, soiled linen and other evidences of personal neglect compete with ignorance to defeat success in practice.

RABIES IN MAN AND ANIMALS*

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Ionia.

During the past few weeks a number of dogs, thought to be infected with rabies, have been found running the streets of the city, and a number of people have been bitten. The brains of three or four of these dogs were sent to the laboratory at Ann Arbor for examination and a diagnosis of rabies has been returned. There are at present four people from this city taking the Pasteur treatment at the state institute. Owing to these facts, I concluded that a paper on this subject would be appropriate for this occasion, and will endeavor to give you a brief review of what is known concerning rabies and its prophylactic treatment.

Rabies or hydrophobia is an infectious disease which occurs epidemically, chiefly among the carnivora, especially the dog and wolf. The infection is carried by the bite of a rabid animal or by a wound or abrasion being licked by such. The disease is often transferred to other species, and when once started can be spread from individual to individual by the same paths of infection. Thus it can occur epidemically from time to time in cattle, sheep, horses, deer, cats, rats, mice, and be communicated to man; but, in modern times at least, infection practically never takes place from man to man, though such an occurrence is quite possible. In the western states the disease is said to be common in skunks, and cases have recently been reported in squirrels; poultry are also said to carry the disease.

In Western Europe rabies is most frequently observed in the dog; but in Eastern Europe, especially in Russia, epidemics among wolves constitute a serious danger. In Northern Germany the disease is practically unknown, as all dogs are kept muzzled.

While a source of infection undoubtedly occurs in all cases of hydrophobia, and can usually be traced, all attempts to determine the actual organism have been unsatisfactory. Memmo has isolated an organism resembling a yeast, which he states has produced both types of the disease in rabbits and dogs. Bruschettini, by using media containing brain substance, has grown a bacillus resembling the diphtheria group, and with which he claims to have produced paralytic rabies in rabbits. Others claim to have isolated various cocci, but in the work of none of these observers is there evidence of the crucial test having been applied, namely that of immunizing animals against the ordinary hydrophobia by means of pure cultures of the alleged causal organisms.

There is no doubt that rabies is, in every respect, analogous to the other bacterial diseases; the most striking proof being the protective inoculation methods which constitute the great work of Pasteur. Everything points to a micro-organism as being the cause. Judging from other diseases, there is a strong suspicion that a living organism is actually present in the central nervous system, saliva, etc., which yield what is called the hydrophobic virus; for otherwise, the disease could not be transmitted through a series of animals, as

* Read before the Ionia County Medical Society.

can be done, if it were a mere toxin. The resistance to external agencies varies. Thus in the nervous system the virus is virulent until destroyed by putrefaction; it can resist the prolonged application of temperature of from —10° to —20°. Centigrade, but, on the other hand, it is rendered inert by one hour's exposure at + 50° Centigrade. Its virulence also probably varies according to its source. Thus, the death rate among persons bitten by mad dogs is given as about 16%, while after bites by wolves, it is 80%, probably due to the fact that the wolf being a more ferocious animal, the number of bites and hence the amount of virus is correspondingly increased. But as we shall see, alterations in the potency of the virus can be effected by artificial means.

As to the pathology after the disease has developed, the most important lesions consist of accumulation of leucocytes, around the blood vessels and nerve cells, particularly the motor ganglion cells of the central nervous system. Especial importance in the rapid diagnosis of rabies is attached to the accumulation of lymphoid and endothelial cells around the nerve cells of the sympathetic and cerebro-spinal ganglia. Various degenerations of nerve cells also occur. The lesions are most perceptible upon the death of the animal, although they can be made out if the animal be killed after the symptoms of the disease are strongly developed. These pathological changes have also been observed in Landry's Paralysis, but given a case of "street rabies," the diagnosis can be made with certainty much earlier than by the inoculation method. The changes in other parts of the body are not so important.

Experimental pathology confirms the view that the nervous system is the center of the disease. The most certain method of infection is by inoculation of the virus beneath the dura-mater. Pasteur has thus found that in case of any animal or man dead with the disease, injection by this method of any part of their central nervous system, of the cerebro-spinal fluid, or saliva, invariably gives rise to rabies, and the natural period of incubation is shortened. The furious or paralytic form can be produced according to which was present in the original case. Inoculation into the anterior chamber of the eye is almost as certain to produce the disease. These inoculation experiments show that the virus is present in the spinal cord, brain, cerebro-spinal fluid, peripheral nerves, and saliva, and there is evidence to show that it is present in the pancreas and mammary glands; but it is not thought to be present in the liver, spleen, kidneys or blood.

The virus gaining entrance by the infected wound early manifests its affinity for the nervous tissues. It reaches the central nervous system chiefly by spreading up the peripheral nerves. This can be shown by inoculating an animal in one of its limbs. If now the animal be killed before symptoms have manifested themselves, rabies can be produced by subdural inoculation from the nerves of the limb infected. The disease can also be produced by injection of that part of the spinal cord into which these nerves pass. This explains how the initial symptoms of the disease (pain along nerves, paralysis, etc.), so often appear in the infected part of the body, and it probably also explains why bites in such richly nervous parts, as the face and head, are much more likely to be followed by hydrophobia than bites in other parts of the body. Intravenous injection of the virus differs from other modes of infection in that it more frequently gives rise to paralytic rabies, and Pasteur explains this by supposing that the whole of the nervous system is simultaneously affected. The virus also has a special affinity for the salivary glands, and it is from inoculation by this

infected secretion that the disease is most commonly produced. It has been found that the saliva of an infected dog becomes virulent three days before the first appearance of the symptoms.

Variable time elapses between the introduction of the virus and the appearance of the symptoms. Horsley states that this depends on the following factors: (1) Age. The incubation period is shorter in children than in adults. For obvious reasons the former are more frequently bitten. (2) Part infected. The rapidity of the onset of the symptoms is greatly determined by the part of the body which happens to have been bitten. Wounds about the head and face are especially dangerous; next in order in degrees of mortality come bites on the hands, then injuries in other parts of the body. This relative order is, no doubt, greatly dependent upon the fact that the face, head, and hands, are usually naked, while the other parts are clothed; it would also appear to depend somewhat upon the richness in nerves of the parts. (3) The extent and severity of the wound. Puncture wounds are the most dangerous; the lacerations are fatal in proportion to the extent of the surface afforded for absorption of the virus. (4) The animal conveying the infection. In order of decreasing severity come: the wolf, cat, dog, then other animals.

Symptoms of excitement or of depression may predominate in a given case, and it is customary to describe clinically two varieties of rabies. (1) Rabies proper or furious rabies. (2) Dumb madness or paralytic rabies. The disease is essentially the same in both cases. In the dog the furious form is the most common. After a period of incubation of from three to six weeks, the first symptoms noticed is a change in the animal's manner; an affectionate dog may suddenly become distant, and a sullen cross dog unduly affectionate. The animal may become restless, it snaps at anything which it touches, and tears up and swallows unwonted objects; it has a peculiar high-toned bark, and spasms of the throat muscles come on, especially in swallowing, and there is abundant secretion of saliva. In the dog the supposed fear of water is, however, a myth; it fears to swallow at all. Gradually convulsions come on, then paralysis, coma, and finally death supervenes. In the paralytic form the early manifestations are the same, but paralysis appears sooner. The lower jaw of the animal drops from involvement of the elevator muscles; all the muscles of the body become more or less weakened, and death ensues without any marked irritative symptoms.

In man the incubation period varies greatly, and is given as an average from six weeks to two months; cases have occurred in two weeks, others have been prolonged to seven or eight months or from one to two years, although this latter fact has not been definitely settled. The symptoms in man are divided into three stages. (1) The premonitory stage in which there are certain prodromata. There may be irritation, pain, or numbness about the bite, and pain along the nerves of the limb. The patient is depressed, and melancholy; complains of headache, loss of appetite; is irritable, sleepless, and has a constant sense of impending danger. There is greatly increased sensibility, and a bright light or loud voice is distressing. The larynx may be injected, and the first symptoms of difficulty in swallowing are experienced. The voice is husky, and there is a slight rise of temperature and increase of pulse. (2) Stage of nervous irritability in which all the reflexes are exaggerated, and there is an extreme degree of hyperesthesia. Any apparent stimulant, i. e., a sound, draught of air, or mere association of a verbal suggestion, will cause a violent reflex spasm. This constitutes the most distressing feature of the disease. The spasms

affect mainly the muscles of the larynx and mouth and are extremely painful; and are accompanied by an intense sense of dyspnea, even after the glottis has been opened and tracheotomy performed. Attempts to take water cause intensely painful spasms of the larynx and muscles elevating the hyoid bone. This is what makes the patient dread the very sight of water and gives the name hydrophobia to the disease. The spasms may be associated with maniacal symptoms; during the intervals the patient is quiet and the mind clear. The temperature is usually elevated to 100° to 103°. In some cases the disease is afebrile. The patient rarely attempts to injure his attendants and may be particularly anxious to avoid hurting any one. Furious mania may come on during the spasms, and owing to the contractions of the throat muscles, the patient may give utterance to odd sounds which imaginative people have likened to the barking of a dog or the snarl of the wolf, etc. This stage lasts from a day and a half to three days, and gradually passes into the third or Paralytic Stage which constitutes the so-called dumb rabies. This stage rarely lasts longer than from six to eighteen hours. The patient becomes quiet; spasms cease; unconsciousness gradually supervenes; the heart's action becomes more and more enfeebled; and death occurs by syncope.

M. Thiriar (*Presse Médicale,* Feb. 8, 1908), reports the following case occurring in a man five weeks after the bite, in spite of intense anti-rabic treatment. The symptoms developed in less than three days, and the patient succumbed without presenting any agitation until an hour before death. He was never aggressive, and never desired to bite those around him. His mental faculties were excellent, and he even joked in ignorance of his terrible situation. The most striking feature was the invincible horror of water which he showed; when it was presented to him he became greatly agitated and hid his head under the pillow. The autopsy showed nothing in particular; but inoculation of the medulla oblongata into animals gave positive results; all the animals developed rabies.

Osler describes a pseudo-hydrophobia or (Lyssophobia) which may closely resemble the true disease; but is nothing more than a neurotic or hysterical manifestation. A nervous person bitten by a dog either rabid or supposed to be rabid, develops within a few months, or even later, symptoms somewhat resembling hydrophobia. He is irritable and depressed, and constantly declares his condition to be serious, and that he will become mad. He may have paroxysms in which he says he is unable to drink and grasps at his throat and becomes emotional. The temperature is not elevated and the disease does not progress. It lasts much longer than the true disease, and is amenable to treatment, especially with powerful electric currents. It is not improbable that the majority of cases of alleged recovery from hydrophobia have been from this hysterical form.

The disease, when once established is incurable, and so I will confine myself to a description of the prophylactic treatment.

When a person is bitten by a rabid animal the wound should be immediately cauterized by some penetrating caustic as nitric acid, hydro-chloric acid, chromic acid, or the actual cautery. Silver nitrate and carbolic acid are inefficient as they do not penetrate deeply. It has been shown that cauterization within five minutes after the bite prevents the disease from developing. If done within an hour, it saves a certain proportion of the cases. After this time it only lengthens the incubation period; but, as we shall presently see, this is an extremely important effect. After cauterization the patient should be sent to the nearest Pasteur Institute for prophylactic

treatment.

Under no circumstances should a supposedly rabid animal be killed as more can be learned by watching the symptoms develop than by post-mortem examination. In the latter case, the occurrence of broken teeth, marked congestion of the fauces, and the presence of unusual material in the stomach, are suspicious. Examination of the spinal ganglia may give a provisional diagnosis which can be confirmed by the inoculation method. If the animal be not killed, the characteristic symptoms can be watched; but if it has been killed, the head can be packed in ice or the organs removed and placed in bottles of sterile water or glycerine and sent to the laboratory for examination. The inoculation method being slow, the diagnosis may be delayed and valuable time lost.

The work of Pasteur has revolutionized the whole treatment of wounds made by rabid animals. Pasteur started with the idea that, since the period of incubation in the case of animals inoculated with the nervous systems of mad dogs is constant in the dog, the virus has always been of constant strength. He found on inoculating a monkey subdurally with such a virus, then inoculating a second from the first, and so on with a series, that the virus gradually lost its virulence, as shown by the longer periods of incubation on subdural inoculations of dogs, until it finally lost its power of producing rabies in dogs when injected subcutaneously. On attaining this point, the virulence was not further diminished by passage through the monkey.

On the other hand, if the natural virus was similarly passed through a series of rabbits or guinea-pigs, its virulence was increased till a constant strength was attained. Hence Pasteur had at his command three varieties of the virus: one of natural strength, one attenuated, and one exalted. He also found that commencing with a subcutaneous injection of a weak virus and following with injections of stronger varieties, he could in a short time immunize dogs against a subdural injection of a virus which under ordinary conditions would cause death. Next he discovered that the exalted virus in the spinal cords of rabbits, as above referred to, could be attenuated so as to no longer produce rabies in dogs by subcutaneous injection. This was done by drying the spinal cords of the rabbits over caustic potash, and the virulence was found to be proportional to the length of time the cords were kept. So a series of cords thus treated each day gave a series of vaccines of the different strengths. He then applied himself to ascertain whether the longer period of incubation in man could not be utilized to "vaccinate" him against the disease before its gravest manifestations took place. The technique was to rub up a small piece of the cord in a little sterile boullion and inject it hypodermically. The first injection was made with a very attenuated virus, that is, a cord fourteen days old. In subsequent injections the strength of the virus was gradually increased. The principle is, of course, the same as developing an artificial active immunity against a bacterial disease.

The method now known as the Pasteur treatment is practically the same. In serious cases the treatment varies and is condensed. Thus on the first day at 1 a. m., 4 p. m., and 9 p. m., cords of 12, 10, and 8 days' drying are used. On the second, cords of 6, 4, and 2 days. On the third a cord of one day. On the fourth day, cords of 8, 6 and 4 days, and on the fifth, cords of 3 and 2 days; and on the sixth cords of 1 day, and so on for ten days. In each case the average dose is about two cubic centimeters of the emulsion.

The success of this treatment has been marked and statistics show that from a death rate formerly sixteen per cent in

all persons bitten, this treatment has reduced it to five-tenths of one per cent.

Pasteur held the view that the spinal cord contained both the microbes and the specific poison; and if the latter spread through the body more rapidly than the microbes themselves, it confers an immunity against the subsequent spread of the microbes and affords protection to the nervous system in particular. In order to confer immunity, it is necessary to introduce as large an amount of the chemical poison as possible.

In the early part of the nineteenth century, Valli, an Italian, showed that immunity against rabies could be conferred by administering through the stomach progressively increasing doses of the virus. Following this up, others have submitted the virus to peptic digestion, and have immunized animals by injecting gradually increasing strengths. The serum from animals thus immunized has been shown to produce passive immunity in other animals; and, when injected into an animal 7 to 14 days after infection, it prevented fatal effects even after symptoms had begun to develop. Whether the serum contains antimicrobic or antitoxic bodies is unknown. This is known as the Italian method of immunization, and is recommended in addition to the Pasteur Treatment.

In this paper I have attempted to give you some of the facts concerning rabies as they are generally known. No doubt many interesting points have been left out owing to a lack of late literature on the subject. As a summary, I wish to emphasize some of the more important points.

(a) Rabies is an infectious disease conveyed by the bite of a rabid animal.

(b) The specific organism has not yet been definitely discovered.

(c) The virus shows especial affinity for the nervous tissues, and can also be found in the saliva, milk, and cerebrospinal fluid.

(d) The saliva of dogs is virulent three days before the symptoms begin to develop.

(e) After a person is bitten, the wound should be immediately cauterized, and the animal isolated and watched for the characteristic symptoms.

(f) If the supposedly rabid animal is killed, send the brain to the nearest Pasteur laboratory for examination.

(g) When once developed the disease is usually fatal.

(h) Do not delay, send your patient to the institute for prophylactic treatment at once.

Institutes for this treatment are now within reach of nearly every one, and a grave responsibility rests on those concerned, if a person bitten by a suspected rabid animal is not subjected to the Pasteur treatment.

The medical standards mean the public welfare; they secure protection of the people against misrepresentation of medical facts.

The doctor should not neglect the fact that while he is examining his patient, the patient is examining the doctor and is likely to reach a diagnosis in advance of him.

The old-time doctor who could swear at his patients and get drunk at pleasure, with impunity, has gone the way of pioneer life. The people of today demand gentlemanly conduct added to medical ability.

Many a doctor's fee is lost because a statement of account is not ready to meet the patient's willingness to pay at the time when his ability and gratitude prompt him to do so.

The value of medical training depends not so much upon a recollection of the language of teacher or text-book, as upon mental pictures of the facts. Mental concepts and not word formation hold in memory the ideas and facts easily reduced to practice. Hence the superiority of clinical and laboratory instruction over the didactic.

The Journal of the Michigan State Medical Society

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APRIL

Editorial

The efficiency of out-door clinics in large cities is measured not only by good diagnosis and rational therapeusis, but by humane interest and coöperation on the part of the attending physicians. The modern tendency to diminish the prescribing of drugs and to increase the advising of proper hygiene, diet, rest, change, psychic control, hydro-therapeutics, massage, and systematic exercise, has brought the average hospital day-patients to the pass where they confront a hopeless prospect. Of what use is it to advise the tuberculosis patient to sleep outdoors, when he has neither knowledge, means, or initiative to provide the apparatus? Of what use to advise a month of rest or change for people who need every day's earnings for sustenance? The absurdity of the advice so glibly given is a reproach to hospital regimé and to the medical conscience. It is nearly a truth that the charity patient is most fortunate who has a complaint grave enough to admit him to the wards, while he who has lesser ills must trust to being bettered by placebos, or wait till he is more seriously diseased.

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The great gap between the hospital clinic and financial charities has been bridged with remarkable success at the Massachusetts General Hospital in Boston, through the medium of a *Social Service Department,* now in its fourth year of operation. No finer application of charitable work can be imagined than this organization; it gives the physician a new interest and impetus in his routine work, for he can see results from that very advice which formerly was nonsense; it brings new hope to the great army of pathologic destitutes who previously were condemned to continued misery, and a lessened or lost wage; and lastly it assures to charitable societies and individuals that none but deserving people will be the recipients of their bounty.

Dr. Richard C. Cabot, who was a pioneer in this movement, says: "From the start our wish has been to make the treatment of out-patients more effective by following the patient's needs back to the home, to his work conditions, his ignorance, his poverty, in the hope of finding clews which the doctor has no time to follow up. To get behind symptoms to the root of the trouble is always the physician's ideal."

With what success this has been done is shown in the *Third Annual Report* of their work. The organization comprises a staff of women workers, two of whom act as general supervisors, and the remainder are divided into committees—one on Psychiatric Work, one on Sex Problems, one on Tuberculosis, etc., each committee having a staff of volunteer assistants, recruited from society women, nurses and charity workers. The system in its relation to the clinics is operated as follows: "Each clinic is provided with a pad of social service reference slips, on which the physician writes his reason for sending the patient." The social service workers are quartered in a special room in the out-patient building, and are no duty during the hours of the clinic.

The following samples of reference

slips will best serve to explain the variety of reasons prompting the physician to seek their aid:

"Generally debilitated. Marked secondary anemia. Needs forced feeding and general hygiene."

"Pyopneumothorax. Is nursing baby. Ought to be in the hospital. What can you do for the baby?"

"Unmarried; pregnant."

"This case needs to be carefully studied; domestic trouble is the probable cause of her disease. I suggest a rest for a time."

"Patient says she must return to work on account of her finances. She really is not in condition to do so yet. Can you do anything?"

"To teach mother method of modifying milk."

"This patient has taken lots of medicine, but doesn't know how to live. Needs exercise and hygiene."

"This patient has rigid flat foot. Needs daily zänder. Can't pay."

"Suffering from moderately advanced phthisis, but is a favorable case for arrest of disease."

These reasons represent only a few of the problems presented to the Social Service Workers. Their activities are far-reaching, and the enthusiasm of the loyal corps of women is explained by the benefits which they see conferred. Their first duty is to comprehend the doctor's diagnosis,—debility, bad hygiene, infectious disease, infantile paralysis, or whatever it may be; their next duty is to make the *"social diagnosis,"*—ignorance, poverty, unhappiness, crime, shiftlessness, etc. They proceed to discover the patient's resources, both personal, family, and community. They have, of course, an exhaustive catalog of societies, institutions, and individuals that are available for help, not only in Boston, but in every city and town for miles around. In one year's time they secured coöperation from 170 different agencies, including state and city institutions, private hospitals and sanatoria, convalescent homes, visiting nursing associations, associated charities and relief societies, settlements, churches, temporary and permanent homes, fraternal organizations, relatives, friends, and private individuals.

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The work for tuberculosis has been a large factor in improved statistics. Nearly one-half of the total cases referred to the Social Service Department were tuberculous, of which 67% were pulmonary. These patients are first taken aside and a thorough explanation given of the disease and the means of arrest. Minute instruction is given as to hygiene and diet. The patient is then referred to the proper agency, depending on the stage of the disease and the patient's home.

If practicable, the home treatment is advised, instituted, and overseen. If no other disposition of the case is possible, it is referred to the *Suburban Tuberculosis Class,* which is affiliated with the hospital, conducted by three young physicians, and a corps of women assistants, who instruct both in class and at the patient's home. Thus no case of tuberculosis is sent away with mere idle advice to "get plenty of fresh air, eggs, milk, and rest," and a prescription for cod liver oil. Some definite help is rendered to every victim, so that he gets started on the right track, with assurance of treatment properly continued.

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The Sex Problem has become an important item in their work, especially as it affects girls. The pregnant unmarried woman, the gonorrheic, the syphilitic, the immoral, are frequently referred, with the idea of giving them a new view of life, and putting them in touch with the proper moral guidance. Some valuable lessons are being learned in this direction, and it seems as if the hospital clinic were an ideal field for the first steps in moral reclamation.

Another feature of this department is the establishment of a lunch-counter in the Out-Patient Clinic, where patients, doctors, nurses, and employes can obtain for five cents a lunch of milk, crackers and cheese. The workers have also taken interest in looking up old patients with varicose ulcers, etc., and gathering statistics that make a valuable report, besides rendering service to the patients.

In the work for psycho-neurotics a great advance has been made. Explanation, suggestion, and re-education of the will have been constantly practised; the *"social consciousness"* is awakened, and concrete factors toward this are employed, such as a clay-modeling class, and summer vacation parties.

All this work is still in the process of development, and as a therapeutic means is still in its infancy. But the scope and method is so evident, so practical, and withal so easy, that Dr. Cabot's report ought to reach many physicians in many cities, and inspire them to inaugurate similar movements.

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How Medical Defense Works in Maryland.—The plan of medical defense which was adopted by the Maryland Medical and Chiurgical Faculty (the State Society of Maryland) differs from the plan proposed for Michigan in that all threatened cases must be first passed upon by the council, which shall determine whether or not the member shall be allowed the use of the machinery of the state society for his defense. According to our plan *every* case will be defended. In explanation of this and of the criticism which has been made, namely, that there might be cases where our members would not be justly deserving of defense, it is to be said that our proposed defense league does not defend a member, except in the sense that it furnishes attorneys who are especially experienced in medico-legal matters and pays their bill. Every man sued must furnish his own defense. If he has been criminally negligent and can furnish no adequate defense, he must take the consequences. Nineteen out of every twenty suits or threatened suits, however, are unjust; are simply cases of blackmail. It is to provide against this possibility that the proposed league is to furnish insurance. It does not furnish the defense, and it is not intended that it should. This distinction should be kept carefully in mind.

In Maryland the plan has been in force for some years. The *Bulletin* has this to say of the work:

> It is now about five years since the State Faculty adopted the plan of insuring its members, relieving them of the necessity for carrying the burden of expensive insurance in private, money-making corporations. The plan adopted was modeled after that in use in New York for several years previously and it has worked admirably. A number of suits have been instituted; a few have actually gone to trial; in every instance, the defendant has been successfully defended; and this insurance has been given the members without extra cost above membership dues. There have at times been rumors, emanating from interested parties, that New York was discontented with this feature of the State Society work or was finding it too much of a burden to continue. The falseness of such rumors is well shown in the report of their counsel, presented at the recent annual meeting of the State Society: "The only verdict ever recorded against a member of the Society since the existence of organized malpractice defense, was reversed and set aside by the unanimous decision of the Court of Appeals. Up to the present time, actions for alleged malpractice suits have been defended in 39 counties of the state. There is evidence of increase in the abandonment of cases brought as soon as the State Society appears by attorney for the defendant. This is perhaps the best proof of the effect which organized defense is creating in the minds of the public." Apparently they gave no thought to giving up the plan.

Book Notices

Appendicitis and Other Diseases of the Vermiform Appendix. By Howard A. Kelly, M. D. Octavo, 502 pages, with 215 original illustrations, some in colors and 3 lithographic plates. Cloth, net $6.00. Philadelphia, J. B. Lippincott Co., 1908.

This splendid volume is an abridged second edition of the author's well known "Vermiform Appendix and Its Diseases" which appeared in 1[illegible]. The latter volume is an immense storehouse of information about the appendix and this new edition retains all the practical part of the former edition, carefully edited and brought up to date. The new book contains some 300 fewer pages and 185 fewer illustrations than the older work; it is less expensive and will appeal more directly to the general practitioner.

Every phase of the subject has received attention in a style so lucid, that there is never any doubt as to the meaning. The illustrations are by Broedel, Huntington and Horn, and are among the best in all medical literature. They will repay very careful study, for the details are well nigh perfect and the legends very full and complete.

In all there are 25 chapters, following one another in logical sequence. There are four chapters on pathology—the most complete text on the subject in the language. Chapter XII, on "Leucocytes in Appendicitis" is new, being an elaboration of a much shorter section in the earlier work.

Every practitioner should read Chapter XVI, on "Treatment Previous to Operation." Indeed the book is intended as much for the medical man who never does an operation as for the surgeon, for the author recognizes that under certain conditions the patient stands a better chance without, than with operation. Early operation, however, is emphasized throughout.

On page 255 are 19 "aphorisms in appendicitis for the general practitioner." Some of these are:

"In all severe cases of abdominal pain, withhold morphine until the diagnosis is clear and appendicitis excluded or included."

"Then give morphine (in small doses), as the best treatment is to 'splint' the bowels."

"Never give purgatives in appendicitis." (Would that this might be emblazoned on every medical diploma.)

"The treatment is just the opposite of that of colic, hence the great care necessary in differentiating."

"Appendicitis, as a rule, starts unexpectedly."

"Note well that a pain exclusively in the left side does not exclude appendicitis."

"Of all local symptoms, muscle spasm is the most important."

"It is better to operate occasionally in error in a doubtful case than to wait for more positive signs and to lose a life now and then. No patient is ever killed by a skillful early operation. Many die for want of one."

"However, this facility with which an operation can be done must not be used for an excuse for slipshod diagnosis and unnecessary operations."

All of these points are carefully elucidated in the text, and full directions given for the management of any stage and practically every complication of the disease.

This is the type of book which should be found in the physician's library. Twenty such, each a monograph on a separate subject, are worth many times over, dozens of the text-book type.

A careful reading has disclosed but one typographical error—and this is in the paging of a reference. The paper and binding are excellent.

It is seldom that one sees a second edition of a work smaller than the first, but we believe that the author has done wisely in making this new book (for it is practically new) smaller and more within the price which the general profession is willing to pay. Nothing of practical value has been eliminated from the former work. Indeed the material is in better form for every-day needs, and it is to be unreservedly recommended.

The National Standard Dispensatory.—Containing the National History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with many references to other Foreign Pharmacopœias. In accordance with the Eighth Decennial Revision of the U. S. Pharmacopœia, by authorization of the Convention. By Hobart Amory Hare, B.Sc., M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, Philadelphia; Charles Caspari, Jr., Ph.G., Phar.D., Professor of Theoretical and Applied Pharmacy in the Maryland College of Pharmacy, Baltimore; and Henry H. Rusby, M.D., Professor of Botany and Materia Medica in the College of Pharmacy of the City of New York; Expert in Drug Products, Bureau of Chemistry, Department of Agriculture, Washington, D. C.; Members of the Committee of Revision of the U. S. P.; with valuable assistance from Edward Kremers, Ph.D., Daniel Base, Ph.D., and Joseph F. Geisler, Ph.C. New (2d) edition, thoroughly revised. Octavo, 2050 pages, with 478 engravings. Cloth, $6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

The National Dispensatory, commonly known as the U. S. D., was originally created to supply the intentional omissions of the pharmacopœia, which is limited to the mere description of the drugs which are official and to lists of ingredients in compounds. The dispensatory may be said to fulfill three absolutely necessary uses (1) working information regarding the drugs of the pharmacopœia, (2) information concerning the pharmacology of these drugs, or their physiological effects and (3) the therapeutics or uses of the drugs. Hence the book is as useful to him who prescribes as to him who fills the prescriptions. It also contains the same information regarding the non-official remedies, many of which are of the highest importance. The U. S. P. is revised every ten years, while the committee working on the U. S. D. is constantly at work, and this new edition of the dispensatory is therefore three years ahead of the last pharmacopœia.

This edition contains 200 more drugs than the first. It also contains an abstract of the national formulary and the text and decisions of the pure food and drug law.

The indexing is a feature to be highly commended. The general index consists of 120 three-columned pages with the names of drugs in English, French, German, Italian, Spanish and Latin. The therapeutic index is no less complete.

Of the high authority of any work emanating from such masters as Hare, Caspari, Rusby, Geisler, Kremers and Base, it is unnecessary to speak. In short, this great encyclopedia of the latest pharmacology, pharmacy and therapeutics is recognized as the leading reference for every one concerned with drugs, their manufacture, dispensing and medicinal uses.

Arteriosclerosis: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, Treatment. By Louis M. Warfield, A.B., M.D., Instructor in Medicine, Washington University Medical Department, etc. With an Introduction by W. S. Thayer, M.D., Professor of Clinical Medicine, Johns Hopkins University. Eight original illustrations. Pp. 172; price, $2.00. C. V. Mosby Medical Book Co., St. Louis, Mo., 1908.

During the past two years much has been written on an old subject under a new caption and from another standpoint. Arteriosclerosis, Hypertension and all cardio-vascular conditions are beginning to receive the attention they deserve from investigators. The etiology has been more definitely determined, much interesting work having developed our knowledge of the morbid changes that occur in the various coats of the arteries. Clinical examination has progressed proportionately in this class of cases, so that we now have more definite standards for the measurement of vascular tension. All this has lead to our enlightenment in the management of patients as well as in the prognosis.

Warfield has attempted a difficult problem in his book, i. e., to condense into a small volume our knowledge on the protean subject of Arteriosclerosis. He has taken facts, and facts only, stated them clearly and concisely, and given us an altogether satisfactory treatise. He has warned us at the outset against laying too much stress on Arteriosclerosis as a disease, rather than ferreting out the real underlying cause and condition of the patient. He concludes frankly by telling us to be careful and treat the patient at all times instead of the disease. It is a little volume well worth purchasing for anyone who interests himself (as he should) in Arteriosclerosis.

A Manual of Diseases of the Nose and Throat. By Cornelius G. Coakley, M.D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York. New (4th) edition, 12mo., 604 pages, with 126 engravings and 7 colored plates. Cloth, $2.75 net. Lea and Febiger, Publishers, Philadelphia, 1908.

The fourth edition of Coakley's Manual of Diseases of the Nose and Throat has appeared, with the additions of recent progress in this branch of medicine. The most notable change is the classification of septal spurs and deflections under the one head of deformities of the septum, and the logical treatment of both conditions by submucous resection. The old Asch operation for deflections, so prominent in previous editions, together with the use of the saw for spurs, has been allowed to drop. It is unfortunate that the use of the tonsillotome and galvano-cautery on diseased tonsils still occupies so prominent a place in the author's regard. More space than ever before has been accorded diseases of the accessory sinuses, in accordance with the increasing recognition of the importance of these conditions. The balance of the text is very similar to previous editions, and closes with a chapter on remedies for local treatment often useful to the general practitioner.

The typographical work is up to the usual high standard of Messrs. Lea and Febiger.

Modern Medicine. Its Theory and Practice. In

Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal. Assisted by Thomas McCrea, M.D., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University, Baltimore. In seven octavo volumes of about 900 pages each, illustrated. Volume V. Diseases of the Alimentary Tract. Price per volume: cloth, $6.00 net. Lea and Febiger, Publishers, Philadelphia, 1909.

This great work goes steadily forward to completion, the fifth of the seven volumes now being fresh from the press. It covers the great field of Diseases of the Digestive System and furnishes a thoroughgoing and authoritative exposition of a group of primary importance. The convenience of having the whole of the great divisions of disease in single volumes has evidently been borne in mind, and the same idea of logical classification and arrangement has been carried out even to the paragraphing, so that any desired item of information can be quickly found. Nothing could be simpler or better than the uniform presentation of each disease in sections dealing with the cause, pathology, symptoms, diagnosis, course and prognosis, and treatment. The paramount importance of the latter is recognized in the fulness with which it is considered.

Modern Medicine differs from most anything undertaken in the past in at least one very important particular, namely its cosmopolitanism. The world is a unit in these days of quick communication, a fact that is vastly beneficial to its inhabitants. The leaders of medicine are scattered through all civilized countries, but engaged in the same quest of knowledge wherewith to combat disease. This knowledge would be confined within very small circles were it not for some means of diffusion, such as *Modern Medicine,* which carries it to all who read English, a large section of mankind. Professor Osler has distinguished himself both as a great physician and a great editor. He not only knows medicine and is interested in every part of it, but also knows the men who are doing the best work everywhere. Consequently he has been able to select the best authority for each subject, and moreover to secure his co-operation. Such is the advantage of prestige and position.

It is scarcely necessary to point out the benefit which every physician can derive from possessing and consulting a work covering the entire domain of practical medicine and reflecting the world's latest and best knowledge. In these pages he can qualify as never before to meet his responsibilities.

Orthopedic Surgery for Practitioners. By Henry Ling Taylor, M.D., Professor of Orthopedic Surgery and Attending Orthopedic Surgeon, New York Post-Graduate Medical School and Hospital. Assisted by Charles Ogilvy, M.D., and Fred H. Albee, M.D., with 254 illustrations. Pp. XXIV-503. New York and London. D. Appleton and Company, 1909.

This book aims to give an outline of the essential facts in regard to deformities and crippling affections for daily use in general practice, without confusing descriptions of superseded or still doubtful theories and practices.

Division into a general, a special, and a technical section makes the book easy to refer to for information about any given case. Thus given a new-born baby with club-feet, the general practitioner, who, as in most cases of deformity, is the first to give advice, can turn readily to the account of club-feet in the special section, and find out just what should be done; by turning to the technical section, he readily finds just how to have made the required brace; if he desires broader information concerning congenital deformities, he finds it in the general section.

The total book leaves the impression of being carefully planned and executed, modern, judicious, inclusive, and supplying, as no other book does, by its excellent illustrations as well as by its readable text, the many needs of the general practitioner in orthopedic surgery.

Quacks and Grafters. By Ex-Osteopath. Being an Expose of the State of Therapeutics at the Present Time, with some Reasons why such Grafters Flourish, and Suggestions to Remedy the Deplorable Muddle. Published 1908 by the Cincinnati Medical Book Company, Cincinnati, Ohio.

This is a breezy, readable, little monograph, written by one who has had experience as a dyed-in-the-wool osteopath, and who has also looked into regular medicine with some discrimination. He points out the inconsistencies of ordinary medical practice of therapeutics and shows how they tend to cause uncertainty and lost confidence among the laity. He particularly points out the lack of agreement and unanimity among physicians, which often holds them up to absolute ridicule. But he recognizes in the main the ultimate triumph of medical practice and urges the advantages of organization to hasten that end. He mercilessly exposes the mercenary motive of sectarian medicine, and of osteopathy in particular.

The book is written in a trenchant style, sincere, direct, and fearless. It must be of distinct interest to every physician and is the kind of book he ought to leave on his reception room table, and help to disseminate in all possible ways. As an educator it is equal to Adams's "Great American Fraud."

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Vol. XI, No. 1, March, 1909. Octavo, 277 pages. Per annum, in four paper-bound volumes, containing 1,200 pages, $6.00 net; in cloth, $9.00 net. Lea and Febiger, Philadelphia.

We have several times in the past expressed the opinion that "Progressive Medicine" is the best of the so-called year books. It is prepared by men who are eminently fitted both for selecting the material and for making comments from their own experience on the same. It appears quarterly, each department being taken up once in the year.

The present number contains reviews of the important articles which have appeared since March, 1908, in the following departments: Surgery of the Head, Neck, and Thorax, by Charles H. Frazier; Infectious Diseases, including Acute Rheumatism, Influenza and Croupous Pneumonia, by Robert B. Preble; Diseases of Children, by Floyd M. Crandall; Rhinology and Laryngology, by D. Braden Kyle; and Otology, by Arthur B. Duet.

Therapeutics of Radiant Light and Heat and Convective Heat. By Wm. Benham Snow, M.D., Author of "A Manual of Electro-Static Modes of Application, Therapeutics, Radiography, and Radiotherapy," "Currents of High Potential of High and Other Frequencies," Editor of the Journal of Advanced Therapeutics, and late Instructor in Electro-Therapeutics in the New York Post Graduate Medical School. Scientific Authors' Publishing Co., 349 West 57th St., New York. Price $2.00 net.

This manual of upwards of 100 pages, illustrated and containing eight full page plates illustrating the methods of treatment, has been prepared to meet the demand for a condensed and practical manual on Radiant Light and Heat Therapy. Chapters have been added showing the contrast between Radiant Light and Heat, and Convective Heat. A chapter is also included showing the comparative actions of Radiant Light and Heat and the Roentgen Ray.

The work has been prepared with great care as to accuracy and detail, and includes the physical and physiological actions and therapeutics of the subjects treated.

Saunders' Pocket Medical Formulary. By William M. Powell, M.D., Author of "Essentials of Diseases of Children." Ninth Edition. In flexible Morocco, $1.75 net. W. B. Saunders Co., Philadelphia.

This is a handy pocket edition of formulae, neatly bound, with blank pages interspersed for writing in additions. The prescriptions are selected from the writings of various authorities, credit being given in each case. They are arranged under diseases, to which there is a convenient thumb index. Dosage has been adapted to the 8th revision of the U. S. P.

In addition to the prescriptions there are dose tables in both apothecaries' and metric systems. a list of incompatibles, tables of weights and measures, gargles, eruptive fevers, poisons, a surgical remembrancer; warnings to patients and friends, formulas for hypodermic medication, obstetrical information, diet table, and facts about drugs and materials used in antiseptic surgery.

This formulary is one of the best and most complete published.

Clinical Diagrams. By James C. Wilson, M.D., Physician to the Hospital of the Jefferson Medical College. 25 sets, $0.50 net. J. B. Lippincott Company, Philadelphia.

These diagrams are designed for the graphic representation of clinical phenomena, for preservation with the notes of cases. A set consists of 6 diagrams of head, neck, and trunk—male and female, anterior and posterior, male right and left sides. They are neatly printed and very reasonable in price.

Books Received.

Report of the Michigan Association for the Prevention and Relief of Tuberculosis for 1908-1909. Compiled by the Secretary, Aldred Scott Warthin, M.D., Ann Arbor, 1909.

Backbone. Optimistic Selections. By S. De Witt Clough, Chicago. Paper. Price 50 cents. Published by the author.

Cosmetic Surgery. The Correction of Featural Imperfections. By Charles C. Miller, M.D., Second Edition, enlarged. 160 pages; 96 illustrations. Published by the Author. Chicago, 1909.

Council on Medical Education.

The Fifth Annual Conference of the Council on Medical Education of the American Medical Association was held at the Auditorium Hotel, Chicago, on April 5th. The morning session was devoted to the address of the chairman, Dr. Arthur Dean Bevan, of Chicago, the report of the secretary, Dr. N. P. Colwell, also of Chicago, and to a series of reports on "Medical Curriculum." The committee having this in charge has been studying the many questions connected with the scope of medical teaching. The names of those on the committee are a guarantee that the work has been carefully done. The reports were as follows: Anatomy, Prof. Charles R. Bardeen, University of Wisconsin; physiology, Prof. E. P. Lyon, St. Louis University; pathology, Prof. W. T. Councilman, Harvard; pharmacology, Prof. Torald Sollman, Western Reserve; medicine, Prof. George Dock, Tulane; surgery, Prof. Charles H. Frazier, University of Pennsylvania; obstetrics and gynecology, Prof. Joseph B. De Lee, Northwestern; eye, ear, nose and throat, Prof. G. E. de Schweinitz, University of Pennsylvania; dermatology, Prof. W. A. Pusey, College of Physicians and Surgeons, Chicago; hygiene, Prof. F. F. Wesbrook, University of Minnesota.

At the afternoon session there were two addresses. Dr. Richard H. Whitehead, Dean of the Department of Medicine of the University of Virginia, spoke on "Some Results of Higher Standards of Preliminary Education." Dr. Flemming Carrow, member of the Michigan State Board of Registration in Medicine, spoke on "The Character of the State Medical License Examination." Dr. Carrow received from Governor Warner a special commission to attend this meeting.

State Board Notes.

A special examination will be held by the Michigan State Board of Registration in Medicine, on May 24, 25, 26, 1909, at Harmonie Club, Detroit, commencing at 8:30 a. m. Applicants are requested to file their application blanks at least one week prior to the examination.

The Board has notified the several medical colleges upon its recognized list, that in future it will require a demonstration of an applicant's fitness to do practical refractive work, in addition to the usual written paper upon diseases of the eye, ear, nose and throat. The examination on this subject will be conducted by a specialist and will constitute an integral part of the examination, and failure to obtain fifty per cent. of possible standing will subject the applicant to refusal of license.

Additional registrations are as follows:

Guy Luvergne Bliss, Three Rivers, Rush Medical College, Chicago, 1908. Reciprocity with Illinois.

James Matthew Van der Ven, New Era, Mich., Long Island Hospital College, New York, 1891. Reciprocity with Wisconsin.

Fred E. Murphy, No. Manitou Island, Mich., Detroit College of Medicine, 1906. Qualification of group III. (Exemption under act of 1903.)

County Society News

Antrim.

At a postponed meeting of the Antrim County Medical Society, held in Bellaire, March 3, 1909, the following officers for 1909 were elected:

President, L. L. Willoughby, Mancelona; Vice-President, A. T. Bodle, Bellaire; Secretary-Treasurer, Wm. A. Evans, Bellaire. Delegate to State convention, L. L. Willoughby, Mancelona; Alternate, R. E. L. Gibson, Central Lake. Director for three years, C. V. Hinman, Bellaire; Director for one year, J. H. Mosely, Mancelona. Program Committee, Drs. Bodle, Mosely and Close.

Owing to the difficulties of winter travel, it was decided to hold most of the meetings during the summer months. The Society will meet in Bellaire, the first Wednesday of May, July and September, the place of meeting being subject to change.

WM. A. EVANS, *Sec'y.*

Berrien.

At the annual meeting of the Berrien County Medical Society, held in St. Joseph, January 21, 1900, the following officers were elected:

President, Dr. F. M. Kerry, Benton Harbor; 1st. Vice-President, Dr. S. S. Green, Berrien Springs; 2nd. Vice-President, Dr. H. G. Bartlett, St. Joseph; Secretary, Dr. H. C. Hill, Benton Harbor; Treasurer, Dr. C. W. Merritt, St. Joseph. Delegate to State meeting, Dr. C. E. W. Witt, St. Joseph; Alternate, Dr. Z. G. Walker, Benton Harbor.

Dr. W. L. Wilson read a paper on "Practical Points in Diseases of the Heart."

Dr. Z. G. Walker, retiring President, delivered an address entitled, "Some of Our Duties."

A committee was appointed to investigate the milk and dairy conditions in St. Joseph and Benton Harbor and suggest any plan that they thought practical for improvement in the quality of milk.

The society is in flourishing condition. We are following the outline for Post Graduate work and have interesting and instructive meetings every two weeks.

H. C. HILL, *Sec'y.*

Calhoun.

At our last meeting. March 2, our program consisted of a symposium on "Anesthesia," being a partial report of the committee appointed six months ago for that purpose. The committee has been retained and will make further study and report later.

During the absence of the secretary in Europe, Dr. H. A. Powers will act as secretary of the society.

A. S. KIMBALL, *Sec'y.*

Genesee.

The members of the Genesee County Medical Society identified with the Oak Grove Sanitarium, delightfully entertained the society at the sanitarium March 2nd. A short program was given, which was followed by luncheon and a social hour. About fifty members of the profession were present.

The papers of the evening were read by Dr. Wadsworth Warren, of Detroit, on "Operations for Deflection of the Nasal Septum," and by Dr. James A. MacMillan, of Detroit, on "Principles of Surgery of the Appendix." The papers were followed by an interesting discussion. After-dinner talks in the interest of more perfect organization of the county society were participated in by Drs. Hitchcock, Morris, MacMillan, Warren. Mahaney, Smith, B. E. Burnell, E. D. Rice, M. S. Knapp and C. B. Burr. During the evening, Dr. J. C. Willson read an original poem.

The physicians present from outside Flint were: Drs. Wadsworth Warren and Charles W. Hitchcock, of Detroit; C. D. Morris, of Pontiac; R. C. Mahaney, Owosso; M. B. Smith and B. G. McGarry, Fenton; A. Goodfellow, Clio; J. F. Rumer, Davison and A. S. Wheelock. Goodrich.

Letters of regret were received from Dr. H. B. McMullen, Cadillac; Dr. C. J. Ennis, Sault Ste. Marie; Drs. Mortimer Willson, of Port Huron and Louis Hirschman, of Detroit, members of the Michigan State Medical Society Council, of which Dr. Burr is also a member; Drs. A. I. Noble and H. Ostrander, of Kalamazoo; and Dr. B. R. Schenck was detained by the sudden death of his father. The society sent him a message of condolence.

B. E. BURNELL, *Sec'y.*

Ingham.

The seventh annual meeting of the Ingham County Medical Society was held at the home of Dr. R. E. Miller, Lansing, on November 12, 1908. Reports of the retiring president and secretary were received, after which dinner was served at 5:30 p. m.

The officers elected were: President, Dr. O. H. Bruegel, of East Lansing; Vice-President, Dr. C. H. Bruecker, of Lansing; Secretary-Treasurer, Dr. Samuel Osborn, of Lansing.

Meetings of the Physicians' Clinical Club have been held nearly every week, on Tuesdays at 8:30 p. m. Two of these evening meetings have been held in Mason.

In order to give the members residing outside the City of Lansing an opportunity to more frequently attend and to get the experience of such members, it is the intention to hold more meetings outside the city.

The March program of the Clinical Club was: March 2nd, "Ductless Glands," Dr. O. H. Bruegel; March 11th, "A New Method of Diagnosis and Treatment of Fistulous Tracts, Tubercular Sinuses and Abscess Cavities," Dr. C. L. Barber; March 16th, "Hemorrhoids," Dr. C. V. Russell; March 23rd, "Pruritus," Dr. C. H. Brucker; March 30th, "Gynecology," Dr. L. W. Toles.

SAMUEL OSBORN, *Sec'y.*

Ionia.

The Ionia County Medical Society held its meeting on March 11th, with the following program as the attraction:

Paper: "The Heart," by Dr. J. J. Defendorf, Ionia. Discussion opened by Dr. A. E. Gesler, Saranac.

Paper: "Treatment and Management of Diabetes Mellitus," by Dr. Joseph F. Pinkham. Discussion opened by Dr. David McClurg, Portland.

Owing to the unavoidable absence of Dr. Pink-

ham, we deferred his paper on "Diabetes Mellitus" to the next meeting.

Dr. Defendorf's paper on "The Heart" was a scholarly production and was greatly admired and generally discussed.

Two new names, Drs. Strahan and Hargraves, were added to our list of members.

The smallness of attendance caused us to defer action on all legislative matters until our next meeting.

C. S. COPE, *Sec'y.*

Isabella.

The following resolutions were passed by the Isabella County Society, and a copy sent to each member of the Legislature:

Mt. Pleasant, Michigan, March 4, 1909.

To the Legislators of the State of Michigan,
Lansing, Michigan.

Gentlemen:—The Physicians and Surgeons of Isabella County submit the following for your consideration relative to the "Optometry Bill."

The eye is the most beautiful and useful, while it is also the most delicate organ in the human body, hence it is that the eye and its diseases and errors of refraction have formed a special department in our University and in every incorporated Medical Institution, not only in the United States, but the world over. Its study, care and treatment are confided to a special department as is surgery, genecology, anatomy and chemistry.

A great deal of misapprehension is created in the ordinary mind by the words "specialty" and "specialist." There is not, nor can there be, any specialty in medicine for the person who has not pursued a full medical course, because the human economy is not built in sections but forms a complete, harmonious whole. Consequently, there cannot be "heart doctors" who know nothing but the heart, "lung doctors" who know nothing but the lungs, nor "eye doctors" who know nothing but the eye. It is absurd. And what is true of medicine, is also true of law, of engineering, etc., as every professional man knows. These remarks are pertinent in view of the so-called "Optometry Bill." now before the State Legislature. We regard the enactment of such a bill into a law as pernicious in the extreme. It is an attempt to create a quasi-profession without any proper fundamental training, nor is there any adequate provision in the bill for such training in the future. Every legislator knows that there is a horde of people in this state, whose business is to make a house to house canvass in order to sell spectacles and their chief business is not to fit eyes, but to make a sale. The proposed legislation would not improve the mental status of these people, but would give them better opportunity to prey upon their victims, by furnishing them with a display card with the "State of Michigan" in big letters and a red seal. Surely, this would be an excellent method, not for the protection of the people, but for their effectual deception. They say that "Optometry" has come to stay. Truly, spectacle venders are always with us, the people know them for what they are, and if they wish to deal with them, that is their business. The proposed law would simply enable the Optometrist to represent himself as that which he is not. The state contains several men whose exact knowledge of this subject is beyond peradventure of a doubt, e. g., Prof. Parker, whom the Regents of the University of Michigan have placed at the head of the Eye Department, Dr. Flemming Carrow, who formerly occupied that position, Dr. Eugene Smith of Detroit, and many others. If the Optometrists could show that they possess the requisite knowledge by going before a competent board of examiners, they would, at least, be acting with some show of sincerity. Who are the proposed examiners? Persons who have been five years in the business of selling glasses, and whose names are furnished by the president and secretary of their society. What qualifications have these worthies? No competent board has yet determined. As to schools and colleges of the so-called Optometrists, they are hazy in the last degree. There is nothing to prevent any jeweler or optician or doctor from calling himself a college of optometry and issuing diplomas at will. We might recapitulate as follows:

1. Professional colleges refuse instruction to persons who desire to follow a specialty, until such persons have completed the regular general course. The idea being that one must understand the general subject before attempting to specialize.

2. The University of Michigan, encouraged by the Legislature, has made strenuous efforts to increase its professional standard of efficiency. It has raised the medical course to four years, besides demanding increased preliminary qualifications. The passage of the proposed bill would undo with one hand what the legislature has built up with the other, by opening a short cut to an

important and delicate medical specialty.

3. Professional licenses are issued to protect competent men and the laity from the incompetent. The proposed law would protect neither, but would give a legal standing to a body of men unworthy of such recognition and standing, hence such a bill is manifestly unjust.

4. It would create a so-called profession where none exists, where none is needed, where none is desired, hence it is unnecessary.

5. It would create a specialty within a specialty without the general information and knowledge possessed by the real specialist, hence it is absurd.

6. It would divert work from the educated and competent specialist to incompetent persons, hence it would be unjust both to the medical profession and to the laity.

7. Medical specialists are governed by a code of ethics in their relations with one another, with their patients and with the public.

8. "Optometrists" are travelers who go about advertising and seeking patients, a thing in itself unnecessary, for, if, one really possesses merit, it will be found out where one lives and patients will seek him. Optometry is commercialism, pure and simple.

For these reasons, we, physicians and surgeons of Isabella County, protest against the passage of the "Optometry Bill."

Signed by Dr. James McEntee, Dr. P. E. Richmond, Dr. C. D. Pullen, Dr. C. M. Baskerville, Dr. A. T. Getchell, Dr. Allen Keene, Dr. M. Sweeney, Dr. Amanda D. Holcomb, Dr. C. E. Goodwin, Pres.; Dr. C. R. Southwick, Dr. L. B. Dickinson, Dr. J. E. Gruber, Dr. Donald McRae, Dr. H. Abbott, Dr. B. F. Johnson, Dr. C. J. Ettinger, Dr B C. Shaw, Dr S. E. Gardiner, Sec.

Jackson.

The following papers and clinics were presented to the Jackson County Medical Society, at Jackson City Hospital, March 4. 1909:

"Superiority of Vaginal Cesarean Section over Manual or Instrumental Dilatation in an Eclamptic Patient with Rigid Cervix." (Lantern slide demonstration.) Dr. Reuben Peterson, University of Michigan.

"The Surgical Treatment of Gastric Ulcer." Dr. R. E. Balch, Kalamazoo.

Clinic: "A Case of Congenital Deformity." Dr. D. E. Robinson, Jackson, Mich.

A boy—C. L.—14 years old, entered the hospital February 5, 1909, with both legs flexed on the thighs at nearly right angles, and double equino-varus. It was deemed best to work on the left leg first. The patient was anesthetized, extension made at the knee, shortening the ham-string muscles as much as possible. The leg and foot were put up in a plaster cast. This procedure was repeated on February 11th and 17th. On February 20th, the tendons of the ham-string muscles and the tendo-Achilles were cut. Excision of the astragulus and part of the calcaneus was done and a Phelps operation performed on the inner side of the foot, thus placing it in a normal position. The foot and leg were put up in a plaster cast. The boy was up on crutches on March 12th. As soon as the boy's condition will warrant, work will be begun on the right leg.

Dr. Strong, of Jackson, presented a case showing the healing of a tuberculous sinus by Bismuth injections after the method of Dr. Beck, of Chicago.

R. GRACE HENDRICK, *Sec'y.*

Kent.

The bringing before our society of such men as Dr. Ballenger of Chicago, Dr. Woods Hutchinson of New York City, Dr. Hitchcock of Detroit, and Dr. Hewlett of Ann Arbor has increased the average attendance at our regular meetings from 28 last year to an average of 72 for this year. Our smallest attendance thus far has been 52 and our largest 106. Our largest attendance last year was 54.

At our last meeting the following report of our Committee on Public Health and Legislation was unanimously adopted and a committee of three was appointed to go to Lansing and endeavor to carry out the recommendations of the report, working with our committee from the State Society.

Your committee, to whom was referred the communications of the Committee on Legislation of the State Society, begs leave to report as follows:

Your committee believes, since the nurses are educated by the physician, in institutions controlled by the physician, and thus under his supervision from the time they begin training until graduation, and because during their entire career they will be under the direction of medical men, and because services from nurses make or mar the physician's work, that the physician should be the one to pass final judgment on their qualifications for nursing, and that in the opinion

of your committee, it seems like expecting too much for the graduated nurses to ask for a board composed of nurses *to say which hospitals. organized and conducted by physicians, shall be recognized as fit to educate nurses.* And further we would recommend a three year course for nurses as proper, provided, they shall not be permitted to do private nursing until they have graduated, i. e., to say, that the Hospital Training Schools shall not sell their services, but that they shall be kept in the hospital under training and their services, which have become valuable through experience, utilized, thus making up for the time they spend during their earlier days in becoming proficient.

That the proper body to recognize hospitals as training schools and examine their graduates as a preliminary to practice nursing is the State Board of Registration in Medicine and not a separate board. This will obviate the necessity of duplicating boards and thus lead us nearer the modern trend of centralizing authority.

In relation to the Osteopathic Bill contemplated, we would suggest that the state has already gone far enough towards recognizing this cult and that it would be far better for us to insist on their having proper medical qualifications as a preliminary to their practicing, and then if they still see fit to practice their original belief, the public will at least receive the benefit of having a man work for or serve them who has sufficient knowledge to prevent him from doing harm.

Regarding the Optometric Bill: The Committee would not care to oppose this bill, if the Legislature will incorporate an amendment providing for the necessity of an ophthalmic examination by a regularly registered physician, the report of his findings to be embodied in a written certificate given to the patient, before any optician shall be permitted to experiment on his eyes or adjust glasses to them.

That, finally, we would recommend that the society send a representative to Lansing to appear before the Legislative Committee to present this matter clearly to them and that a copy of these resolutions be sent to our Kent County members of the Legislature and also to the State Committee on Medical Legislation.

S. C. GRAVES,
J. G. HUIZINGA,
W. J. DU BOIS,
Committee.

Our Committee on Anti-Tuberculosis Work made the following report:

Since the last report, one month ago, we have filled three church requests for speakers and have spread the propaganda to a combined audience of some 500 people. Your committee recommend that you discontinue the work of the lecturing phalanx for the present. The Committee also recommends that some means should be sought whereby we may accomplish the reporting of a larger percent of tuberculosis patients now living in the city and to this end suggests that our society recommend to our Board of Health some means, formulated with this object in view.

The Committee is disposed also to suggest that a communication from our Secretary be sent to the Local Anti-Tuberculosis Society commending their dispensary plan and suggesting that some means be adopted whereby the benefits of this dispensary may be brought more fully to the notice of the public in general. The housing plans of the Social Committee of the Board of Trade were discussed and a communication of approval is suggested to be sent to that committee.

This *report* with its *recommendations* was adopted.

Our Milk Commission, as its Chairman reported, "Is sawing wood" in arranging for the Pure Milk Contest among local dealers during the early spring months.

With the view in mind of following up the missionary work that we are attempting to accomplish with our Bulletin and also in connection with the adoption of a new by law regarding the qualifications and eligibility to membership, a Membership Committee was appointed who were instructed to endeavor to obtain the application of every eligible physician in the county.

F. C. WARNSHUIS, *Sec'y.*

Lapeer.

The last meeting of the Lapeer County Medical Society was held at the Home of the Feeble Minded and Epileptic in Lapeer, January 13, 1909.

Dr. J. H. Carstens, of Detroit, was present and gave an interesting talk on "Gall Stones," advocating early operative procedure in such cases.

"Diabetes Mellitus," by Dr. H. E. Randall, of

Lapeer, was a comprehensive paper on the subject, and was enjoyed by all.

"An Interesting Case" was presented by Dr. J. H. Burley. of Almont. A number of physicians having also seen the patient, the discussion following was particularly lively.

The physicians and their wives were guests of Dr. and Mrs. Chamberlain at dinner.

Resolutions were passed thanking Dr. Carstens for his presence and Dr. and Mrs. Chamberlain and medical staff for the generous hospitality shown the Society.

The next meeting will be held at North Branch, April 14, 1909.

J. O. THOMAS, *Sec'y.*

Ottawa.

The Ottawa County Society has sent the following letter to the senator and representatives of the district:

Holland, Mich., March 13, 1909.

Honorable Sir:—

We, the undersigned members of the Ottawa County Medical Society, residing in Ottawa, Allegan and Kent Counties, respectfully call your attention to the Giles Optometry Bill which has been introduced into the State Legislature.

We protest against the bill as being unfair to the people of the State of Michigan and call your attention to the following points: It is unfair to the *people* to have the Opticians registered because—

First.—The fitting of glasses is as much a part of the practice of medicine as the healing of ears. There is no sense more important than the sense of sight. There are no more delicate organs than the eyes, the function of which are so important to the patient. This is especially true of the child and it is fast becoming recognized that many delinquent children are so only because of defective eyesight. Is it fair to allow these children to be treated by so-called Opticians, Optometrists, Graduate Opticians, Optical Specialists and such products of short courses in *optical schools* or graduates of no school at all? These schools have no connection with any medical institution and a diploma is obtained by a short course or a diploma fee alone. No one without a thorough medical training can understand many of the varied diseases which affect or are affected by the eye. Licensing the opticians means approving of their treating such diseases.

Secondly.—The people are imposed upon by such so-called "specialists" because they are led to believe that a license or diploma means full qualifications, whereas it does not. No child should be fitted with glasses without the use of atropin or one of its substitutes in order to insure correct fitting. This the optician is unable to do.

Thirdly.—Many opticians impose upon the people by advertising "Examination Free" or "Eyes Examined Free." The public is made to believe that it pays nothing for examination. The patient does, however, pay for that examination in the price added to the real cost of the glasses.

The bill is not fair to the physician who has devoted his time and money to the development of this specialty after he has passed a complete course in a medical school, studying Medicine. Surgery, Gynecology, Obstetrics, Hygiene, Chemistry, Pathology, etc. It is only by such a complete course that one can be fitted for such a specialty as the diseases of the eye. The specialist has given years of his time and hundreds of dollars in money to this study and it is not fair to allow an optician to attempt that same work without similar preparation.

The Giles bill provides for examination by opticians who are to be chosen from their own number. Now, then, can that examination be anything like it should be? The optician's lawful business is to make lenses and frames and to supply them on physicians' prescriptions, but it is not his business to fit them to the patient.

The health and sanitation of the people of Michigan have been left in the hands of the Medical Profession. This question belongs to that heading and it rests with the profession to protest. Now it rests with you to see that the people receive a square deal.

Very respectfully yours,

J. W. Van Den Berg,	C. J. Fisher,
E. Hofma,	C. P. Brown,
W. S. Walkley,	J. A. Mabbs,
T. G. Huizenga,	H. Kremers,
B. B. Godfrey,	J. J. Mersen,
T. A. Boot,	R. J. Walker,
H. J. Poppen,	D. G. Cook,
J. F. Peppler,	W. A. Maxfield,
W. J. Presley,	A. Van Der Veen,
E. E. Brunson,	A. T. Godfrey,
J. Masselink,	C. H. Thomas,
H. A. Stroud,	N. H. Kassabian,
N. Coburn,	J. S. Walling,

F. D. Smith,
D. B. Lanting,
P. J. De Pree,
W. De Kleine,
H. B. Baker,
N. J. Cherry,
J. H. R. Gorvers,
A. Leenhouts, Pres.
W. G. Winter,
J. C. Cousins,
A. J. Brouwer,
E. T. Brunson,
A. Turner,
J. H. Mowers,
E. D. Kremers, Sec'y.

News

A bill has passed the Illinois legislature authorizing cities and villages to levy a special tax of one mill to construct and maintain tuberculosis sanatoria. This will secure for Chicago an amount close to $160,000.

The Ingham County Anti-Tuberculosis Society has been recently organized with affiliations with the State Association. The directors consist of Rev. W. C. Hicks, R. E. Olds, Rev. F. G. Ward, Smith G. Young, Dr. L. W. Toles, Dr. J. A. Campbell, Mayor J. S. Bennett and Dr. Clara M. Davis.

In New York a bill has been introduced into the legislature which requires the Supreme Court to designate at least ten and not more than sixty physicians in each judicial district as medical expert witnesses, to serve when called in any civil or criminal action by the court or either party, for such compensation as the presiding judge at the trial allows, and to be at once paid by the fiscal officer of the district in which the trial is held. The bill does not limit the rights of parties to call other expert witnesses as at present.

Dr. A. S. Kimball, of Battle Creek, left on April 12, for a four months' trip to Europe. He will spend three months as clinical clerk at the Great Ormond Street Hospital for Sick Children. During Dr. Kimball's absence, the secretaryship of the Calhoun County Medical Society will be filled by Dr. H. A. Powers.

Dr. Richard Leuschner, of Mt. Clemons, has announced his affiliation with the Avery Hotel Company of that city.

Dr. David Inglis has removed his office from the Majestic Building to 574 Woodward Ave., corner of Erskine St., Detroit.

Announcement has been made of a new journal to be devoted to pharmacology, to be known as The Journal of Pharmacology and Experimental Therapeutics. It is to be edited by Dr. John J. Abel, Professor of Pharmacology at Johns Hopkins University. Dr. C. W. Edmunds, Professor of Materia Medica and Therapeutics at Ann Arbor is one of the twelve associate editors. Subscriptions at $5.00 per volume may be sent to The Williams & Wilkins Publishing Company, 2427 York Road, Baltimore.

To celebrate the fiftieth anniversary of his entering upon practice, a banquet was held in honor of Dr. W. F. Breakey, at the Michigan Union Club house, Ann Arbor, March 31st.

When some ignorant or thoughtless individual spits in the street-cars of Minneapolis, the conductor hands him a red card; and as the citizens are all aware what information the card conveys, the recipient is at once stared at. If he has any sensitiveness in his nature the lesson is never forgotten.

An Easter tuberculosis stamp has been designed by Miss Clara Dyer, of Detroit, and is for sale by the State Tuberculosis Society. The design is said to be very handsome. There will be two classes, one at one cent and the other at five cents. The proceeds of the sale will be devoted to the work of the State Tuberculosis Society.

Dr. H. J. Hornbogen, Marquette, returned March 9th from his trip abroad, having spent several months in post graduate study in Vienna and in visiting the various hospitals in London.

Extensive improvements are to be made shortly on the General Hospital at Port Huron, Mich.

Petitions to the state legislature asking the passage of a state tuberculosis law and an increase to the sanatorium at Howell, was circulated in Ann Arbor by signers recently.

In Florida a "State Health Day" was designated and held on February 12th, when programs were carried out in the various schools, including quotations regarding health, the care of the body, fresh air, and alternating readings of sections from the health catechism.

Dr. Herman C. Emmert, Detroit, has been appointed to succeed Dr. Earl as house physician in the Wayne County Asylum at Eloise. Dr. Earl was asked to resign, but is contesting the complaints alleged against him.

Dr. P. H. Mullowney has been appointed to

succeed Dr. L. K. Green, in charge of the Detroit office of the Bureau of Animal Industry. Dr. Mullowney was sent here from New York last fall to assist in checking the outbreak of foot and mouth disease. Dr. Green has been transferred to New Haven, Conn.

Dr. Gustav Nicolai, of Detroit, sustained a bad bruising and shaking up recently while attempting to board an electric car.

Dr. W. A. Spitzley, of Detroit, has returned from a four weeks' trip in Arizona and California.

The following certificates of registration have been revoked by the Michigan State Board of Registration in Medicine: Archibald M. Waters, Albert A. Patterson, Harriet A. Freemeyer, Thesis Stinchcomb.

"Dr." Eliza Laudau, a notorious "woman's specialist" in Detroit, has been found guilty of manslaughter in connection with the death of a woman on whom she had performed a criminal operation.

Dr. F. Smith, Grand Haven, was the defendant in a damage suit by a patient who claims she was neglected by Dr. Smith after the birth of a child. The claim is for $10,000 damages.

A fine lecture room is being fitted up in the Homeopathic Hospital, in Ann Arbor, in the northwest part of the building, under the male medical ward. It is to have a seating capacity of over 200.

Dr. J. B. Chapman of Pontiac has moved to Davisburg.

Dr. F. B. Walker has been away on a trip to California.

Dr. Kenneth Dick has moved from Port Sanilac to Applegate, where he has taken the practice of Dr. John Kelly.

Dr. J. E. McIntyre, resident at Harper Hospital, Detroit, has just recovered from scarlet fever.

The many friends of Dr. H. M. Rich of Detroit, will be glad to learn that he has recovered from the severe attack of ophthalmia, and has resumed practice.

Marriages

V. Joseph Blanchette, M. D., of Walkerville, to Miss Catherine A. Otterbein, of Grand Rapids, February 22.

Howard Force, M. D., Ludington, to Miss Francis Penton, Detroit, February 2.

Dr. Henry J. Van der Berg and Miss Edna E. Gibson, of Petoskey, Mich., were married at the home of the bride's sister, Mrs. Frank Hamilton, in Grand Rapids.

William J. Stapleton, M. D., to Miss Mamie S. Ireland, both of Detroit, January 30.

Deaths

George Washington Beeman, M. D., a graduate of the Detroit College of Medicine in 1899, died at his home in Harbor Springs, from the effects of carbolic acid, believed to have been taken with suicidal intent, aged 42.

Frank Jackson MacNett, M. D., Traverse City, a specialist in eye, ear, nose and throat diseases, died at his home, February 28, from pneumonia, aged 37.

Isaac A. Thompson, M. D., Grand Rapids, died at St. Mary's Hospital, February 25, aged 42.

Ambrose Brown, M. D., for many years a practitioner of Grand Ledge, and a Civil War veteran, died at his home in Lansing, February 24, from cardiac dropsy, aged 68.

Wesley McGuffin, M. D., of Battle Creek, died in Phoenix, Ariz., March 1, from tuberculosis, aged 42.

Theodore Vanheuson Law, M. D., died at his home in Dearborn, February 24, aged 66.

William L. MacBeth, M. D., died at his home in Galesburg, February 17, aged 67.

George Fox, M. D., of Caledonia, died at his home, January 27, of senile debility, aged 87.

Julian A. Buell, M. D., for over forty years a practitioner in Michigan, died at his home in Franklin, February 3, aged 69.

A. L. Kilmer, M. D., of Bay City, died at the hospital in Big Rapids, March 1, as the result of an operation to remove a tumor from his brain.

Thomas Sterling Barclay, M. D., for thirty-four years a practitioner in Detroit, died at his home early in March, from dropsy, aged 68.

Correspondence.

Ann Arbor, March 17, '09.

To the Editor of the Journal:

In the paper entitled "The Diagnosis and Treatment of Pleurisy with Effusion," which I contributed to the March 1908 number of THE JOURNAL, there occurs an error on page 120. The lines reading: "the weekly injection of ascending doses of Koch's old tuberculin" and "It is well to begin with as small as 1/1000 or 1/500 millegram of TA" should read, "the weekly injection of ascending doses of Koch's new tuberculin (TR.)" and "It is well to begin with as small a dose as 1/1000 or 1/500 millegram of TR."

Yours truly,

FRANK SMITHIES, M. D.

Chicago, Ill., March 1st, 1909.

To the Editor:

I am collecting material for a paper upon atropine as a hemostatic, and would be obliged to any of your readers who would send me notes of their experience with this remedy. I am particularly anxious to receive adverse reports, as well as those favoring the remedy.

Thanking you for the courtesy of inserting this note, I remain

Very sincerely yours,

WILLIAM F. WAUGH, M. D.

1424 E. Ravenswood Park.

Muskegon, Michigan, March 2, 1909.

Chairman Michigan State Medical Society,
Committee on Contract Practise.

Dear Doctor: At the last meeting of the Muskegon-Oceana County Medical Society the enclosed clipping, which is taken from a Coldwater paper was presented before the society by one of its members. The secretary was instructed to write to you concerning this article.

Can you give us any information concerning such a law regarding contract practice in Michigan? If so we would like all the information on this subject that you can give us.

Very truly yours,

V. A. CHAPMAN, Secy.

The clipping:—

New Law Prevents State Physicians from Forming Contracts With Factories.

LODGES ARE INCLUDED.

Think Technicality May be Dodged Successfully However by Verbal Understanding

Michigan physicians have recently become acquainted with the fact that a new state law prohibits them from making specified, written agreements with manufacturing companies and corporations of various kinds, to act as the medical representative of such concerns. The law also includes lodges in the list of institutions from which doctors are barred from making similar agreements.

Scores of physicians have been connected with companies as surgeons to whom all persons injured in the plant must go. Now, it is said, physicians may still have a verbal agreement with factories relative to this sort of thing. No written paper or instrument must exist between the physician and the company, however, showing that his services are retained by it. Summed up, the statute merely puts the ban on a physician practicing under contract.

Physicians were generally aware of the law, and it is said that the medical association and fraternity generally are the most active in ascertaining that the law is obeyed. Factory officials may still continue to recommend a physician to any person injured in a plant, but the injured party pays for the services of the doctor, not the company, as in many cases heretofore. The individual may be reimbursed by the concern, but this is none of the physician's business; he works for the individual, not for the corporation.

Bowen, Douglas, Whiting & Eaman
Attorneys and Counselors at Law
Moffat Building.

Detroit, March 10, 1909.

Dr. F. B. Tibbals,
99 Fort Street West, Detroit, Mich.

My Dear Sir: Your letter of recent date, enclosing letter of Dr. V. A. Chapman of Muskegon, secretary of the Muskegon Oceania Medical Association, with newspaper clipping, is duly received.

The newspaper item refers to the fact that there is a law in the State of Michigan prohibiting physicians from making written agreements with manufacturing companies and corporations

to act as their medical representative or advisor.

I have examined carefully the Michigan statute up to this date, and fail to find that any such act has ever been passed. This is the first suggestion that I have ever heard that such a law existed. It is possible that the present legislature has passed some act which would be the foundation for the newspaper item referred to, but this I very much doubt, and I have written to Lansing to make inquiry as to this fact.

Act 157 *of the Public Acts of* 1907, provides: "That it shall be a misdemeanor for any physician or surgeon to employ or solicit a capper or drummer for the purpose of procuring patients, or who shall subsidize any hotel or boarding house who shall pay or present to any person money or any other valuable gift for bringing patients to him."

Act 164, *Public Acts of* 1907, which is a general act, provides for: "Examination, regulation, licensing and registration of physicians and for the punishment of offenders against the act or that could in any way be construed as making it unprofessional or a violation of the ethics of the profession or of law, to act as medical adviser in the capacity mentioned."

I quote these two acts only as indicating the most recent legislation on the general subject of the conduct of physicians. They, however, relate in no way to the question raised by Dr. Chapman. If I hear that any act has been passed or any bill introduced in Lansing at the present legislature touching this subject, I will immediately advise you.

Very truly yours,

SAMUEL T. DOUGLAS.

Michigan House of Representatives

Lansing, March 11, 1909.

Mr. S. T. Douglas,
Moffat Building, Detroit, Mich.

Dear Sir: I have examined the index of bills introduced and find nothing that corresponds to the description that you give in your letter of March 10. The only bill that has been pointed out to me by the bill clerk of the house that seems to come any where near corresponding with that you ask about, is one to provide for the licensing of itinerant vendors of medicines and drugs. This I am satisfied is not what you had in mind.

Very truly yours,

GUY A. MILLER,
Representative.

Murine Eye Remedy.—"Murine Eye Remedy" is a nostrum that seems to have sought by its advertisements in the Chicago papers during the session of the American Medical Association, to lead the public to infer that the company manufacturing it had an exhibit in Exhibition Hall—a master-stroke of advertising impudence. Before the Food and Drug Act became operative, the carton in which this eye water was sold, read, "Murine a Positive Cure for Sore Eyes," etc. Since then it is called "a reliable relief." As found on the market today, "Murine" is an amber-colored liquid, practically odorless, having a slightly bitter taste, and giving an alkaline reaction to litmus. From the examination made in the Chemical Laboratory of the American Medical Association, which is reported in detail, it appears that "Murine" is essentially an aqueous solution of borax (12 grains to the fluid ounce, or 2.59 gm. per 100 c.c.) containing a trace of berberin or some golden seal preparation. It is of interest that it is variable in composition. A sample examined Nov. 30, 1907, contained a carbonate and responded to alkaloidal tests very feebly; while the product today contains no carbonate and shows definite traces of alkaloids. The possible psychic influence of the price is suggested. If instead of paying $1.00 an ounce—the price charged—the public could buy it for 5 cents a gallon—the estimated cost—what would be the effect? The president of the Murine Eye Remedy Company is J. B. McFatrichs are also, respectively, the president and Chicago; the treasurer is George W. McFatrich, M. D., also an eclectic, practicing in Chicago; O. F. Hall is the secretary. The McFatrich are also, respectively, the president and secretary of an institution with the sounding title of "Northern Illinois College of Ophthalmology and Otology," which confers no fewer than seven degrees, all with ornate diplomas. Why the term "otology" is added to the title of the college has not yet been determined. So far as learned, the eye is the only organ which is even supposed to be studied. The college, in fact, appears to be a sort of annex to the "patent-medicine" concern, occupying the same quarters. The danger in the indiscriminate use of the "Murine Eye Remedy" is probably a negative one in most cases—that it lulls the patient into a false sense of security—but that it may thus be a very real one is evident when we see it recommended in cases of ophthalmia neonatorum and other equally serious conditions.—*J. A. M. A.*, Nov. 7, 1908.

Medical Economics

Little Things Gleaned from Our Exchanges Concerning the Doctor Himself and the Business Side of the Practice of Medicine.

Business Wisdom in Medicine.—While medicine is a science and an art, still there are a large number of good men and their families who depend upon its practice for their daily bread. We may wisely have before us always the high ideals of our profession, but we cannot escape the grocer and the tax collector. No matter how hard the doctor works, the mortgage on his house is also at work, and the children's shoes are wearing out. In justice to his patients it behooves him to be a good doctor, and in justice to himself and his family it behooves him to be all this and a good business man as well.

Most of our medical publications devote their pages, quite exclusively, to the scientific and technical side of practice. It would be desirable for some of our better journals to give more attention to the doctor himself. He is the agent through whom all of this medical knowledge must be made to reach the people. He is not only the source of medical wisdom but the mechanism for its application. He, as well as the public, for the sake of his best efficiency, should be interested in his good condition and prosperity. It is not undignified to consider the practical business relations of the doctor to his professional work; indeed, it is a lack of wisdom not to consider them. —*N. Y. State Jour. of Med.*

The Personality of the Doctor counts for very much. It is one of the chief distinguishing points among physicians. A pleasing personality covers up a lot of ignorance and is most valuable stock in trade. In this matter it is the little things that count. It is a great art to be able to say the right thing at the right place and to say enough and then quit. The personal appearance of the doctor is important. He can always look neat and tidy and have a clean face. Women especially notice these things. The doctor's dress should never be loud or foppish. He should look well without having anything outlandish about him to attract attention. The doctor who wants to look sagely sometimes quits his barber and lets his hirsute appendage grow. In this matter he never fools anyone but himself. People can see through his whiskers—they are not so ponderous. No freakish attire brings success in itself. Wisdom does not necessarily lie in whiskers and bald heads. Perhaps sympathy and genuine interest in patrons is a quality that most endears people to a physician, aside from his skill as a physician. That's why they will send into another county for you rather than patronize the man who lives across the street. The latter has not so much charity in his heart as you have, although he may know more than you about medicine. The successful doctor should strive to cultivate a pleasing personality. There is a charm about polite and courteous manners that is quite irresistible.—*Medical Summary.*

What Medical Societies Will Do.—Medical societies incite to more diligent study of books, journals, and to more accurate records of clinical cases and to more intelligent use of laboratory methods. Illustrative of this fact, Dr. Southworth, of Monroe, Mich., tells the following: There located in one of the byways of Monroe county, Mich., some years since, a graduate of a medical college formed to draw patients to the professors' offices rather than educate competent physicians. He had little preliminary training and less professional. Casually meeting him at the bedside the doctor invited his attendance at the next meeting of the Monroe County Medical Society. He came, was an eager listener to the reading of papers and the discussions thereupon and accompanied the doctor to his office eager to learn how he did his work. Shortly he returned, saying that he must have a microscope like the doctor's, and learn his ways of using it. Later he sought information on medical journals that he might select some for his own use. So from time to time he added to his equipment, attended the county society meetings, read an occasional paper —the first very crude, the next better—thus continuing till he became one of the accomplished young men of the county and his early death was widely lamented.—LEARTUS CONNOR.

Medical organization is identical with public health interests.

Progress of Medical Science

MEDICINE.

Conducted by

T. B. COOLEY, M. D.

Studies on Thyroid.—The latest bulletin of the Hygienic Laboratory of the Public Health and Marine Hospital Service describes some very interesting experiments by HUNT and SEIDELL on the relation of iodine to the physiological activity of the thyroid. There has been a good deal of dispute as to whether the activity varies in proportion to the iodin content, and if so, whether increased iodin content is a cause or merely an accompaniment of the greater potency. These experiments seem to go far to settle the question. The authors have succeeded in working out a very satisfactory test for the physiological effect of thyroid by the use of acetonitrile, a substance which causes poisoning by the gradual formation of hydrocyanic acid under the influence of tissue metabolism. The administration of thyroid has a very marked effect on the degree of this toxicity through the changes in metabolism which it produces—increasing the rapidity of cyanide formation in most animals, but diminishing it in the mouse. This action is so distinct and peculiar that it may be used also for determining the presence of thyroid products in the blood. The susceptibility of animals to the opium alkaloids is also increased by thyroid feeding, but with most of the other poisons experimented with no effect was observed.

The acetonitrile test was used first to determine whether or not iodin-free thyroid produced any physiological effect. Thyroids giving no iodin tests were obtaned from children, and from various species of animals. All of them had some action in diminishing the susceptibility of mice to acetonitrile, and this varied greatly in the thyroids from the different animals—iodin-free samples from one species having occasionally more effect than those from another species containing small amounts of iodin. The authors believe this to be due to an action of the thyeoglobulin which has been denied by some, and the differences they ascribe to the varying amounts of this substance known to occur. A second set of experiments was with thyroids from animals of the same species. Commercial dessicated sheep thyroid was used, and in view of the results obtained it is interesting to note that the percentage of iodin in the preparations used varied from 0.06 to 0.38. The experiments were elaborate, and the technic carefully worked out. The results showed almost an exact parallelism between physiological action and iodin content. Similar comparison of different samples of thyroids from other animals—hogs, guinea pigs, etc., showed similar results, as did the use of morphine instead of acetonitrile as an indicator. Still another series of experiments was devoted to the question whether the iodin was essential to the effect of the gland, or was merely deposited in glands which were physiologically more active. A group of dogs whose thyroids were of practically the same composition and degree of activity were taken, and some of them were treated with iodin preparations for a period too brief for a stimulating effect of these on the gland to be assumed. Their thyroids, however, showed a decided increase in iodin content over those of the controls, and the physiological action was proportionately increased. In the course of the report the authors put forth some interesting speculations regarding the cause of some symptoms of myxedema and Graves' disease in the light of their work. *Bull No.* 47, *Hyg. Lab. P. H. & M. H. Service.*

SURGERY.

Conducted by

C. S. OAKMAN, M. D.

Tuberculosis of the Cervical Lymph Nodes: Report on 275 Cases Treated by Radical Extirpation.—Tuberculosis of the neck lymphatics is the only common form of tubercular infection which can be removed surgically without injuring an important structure, and without serious disfigurement. This is explained by the fact that the important structures are in soft parts and are easily separable, and that the infection is uniform in its development from above downward, allowing systematic and complete dissection. Cervical glandular tuberculosis is not very responsive to hygienic, climatic, and medicinal treatment.

In the study of 275 cases operated in his own practice, hospital and private, DOWD followed the individuals for years after operation, and offers the records below:

Sixteen were followed more than ten years.
Eight were followed into the tenth year.
Four were followed into the ninth year.
Four were followed into the eighth year.
Eight were followed into the seventh year.
Fourteen were followed into the sixth year.
Sixteen were followed into the fifth year.
Twenty-six were followed into the fourth year.
Twenty-eight were followed into the third year.
Fifty-nine were followed into the second year.
Forty-two were followed into the first year.
Fifty not traced, or recently operated.

Of fifty-four patients observed for periods of from five to thirteen and one-half years, fifty-three are apparently cured. By this is meant that they are in vigorous health, with no palpable neck nodes or only such small hard ones as are believed to be hyperplastic and not tubercular. They also show no evidence of tuberculosis in any other part of the body. The author concludes that those who pass the five-year mark without recurrence need have little apprehension.

The second group of forty-two patients, under observation between 3 and 5 years, gives thirty-seven apparent cures. The five remaining comprise four recurrences and one death from phthisis.

The group of eighty-seven cases followed from 1 to 3 years gives 82.8% of apparent cures, two deaths from tuberculosis, eight recurrences, one persistent sinus, one syphilitic swelling, and one death from typhoid.

Of ninety-two patients observed less than a year, 86% gave no evidence of tuberculosis, four had recurrences, one had had operation for recurrence, one had tubercular peritonitis, one had syphilitic swelling, and there were four deaths from tuberculosis, and one from scarlet fever.

The only operative death in the 275 cases was due to secondary hemorrhage from the internal jugular vein.

Sources of infection. In 81% of the cases the first noticeable infection was in the subparotid nodes, indicating infection from the pharynx, tonsils, or posterior part of the mouth. In most of the remainder, the submental or submaxillary nodes indicated the teeth, or front part of the mouth as the atrium.

Operations for Recurrences. There were forty-six operations for recurrences, of which twenty-six belonged to the severe type. Results were good. The existence of hard nodules the size of a pea or bean was often puzzling, but the author found upon excision, in eleven instances, that they were hyperplastic and not tubercular. CHARLES N. DOWD, in *Surg. Gyn. and Obst.*, Mar., 1909.

The Intra-Abdominal Administration of Oxygen.—BAINBRIDGE has made observations, both experimentally and clinically, on the effect of oxygen introduced into the peritoneal cavity. He concludes that it lessens shock, hemorrhage, nausea, and vomiting; tends to overcome negative intra-abdominal pressure after removal of large tumors; lessens formation of adhesions, and influences favorably certain types of tuberculous peritonitis. He also observed sufficient beneficial effect in cases of septic peritonitis to offer the suggestion that it be given further clinical trial in such cases.

Oxygen is administered by means of a sterile rubber tube inserted in the peritoneal cavity, while the wound is sutured firmly around it, leaving a purse-string suture in the peritoneum, to be tightened when tube is removed. The oxygen is passed through accessory tubing, which lies in hot water. *Annals of Surgery,* Mar., 1909.

PATHOLOGY AND BACTERIOLOGY.

Conducted by

C. E. SIMPSON, M. D.

Arteriosclerosis of the Uterus.—REES gives the histories of four patients in whom uncontrollable hemorrhage from the uterus was due to sclerosed uterine arteries. There was no evidence of a general arteriosclerosis, but the pathological condition of the uterine vessels was evident at operation or easily demonstrated microscopically. Quoting OSLER on physiological arteriosclerosis that "it depends in the first place upon the quality of arterial tissue (vital rubber) the individual has inherited, and secondarily upon the amount of wear and tear to which he has subjected it," the author believes that the muscular arrangement of the uterus, the fact that it is subjected to the most radical structural changes, and the dilating and contracting of its arteries produce a condition which is most favorable for the development of a localized physiological arteriosclerosis. This in some cases changes into a pathological condition. The brittle arteries then break, resulting in a hemorrhage which is not cured by curettement nor by the exhibition of ergot. The following points are emphasized:

First: A diagnosis of arteriosclerosis of the uterus can only be made when it is possible to exclude every other cause of hemorrhage from the uterus, and by miscroscopical examination of scrapings from the uterus in which sclerosed capillaries are found, or finally from sections of such a uterus after its removal.

Second: Arteriosclerosis, as a definite cause of hemorrhage from the uterus, occuring in women between the ages of forty and fifty and among those who have borne children, is of greater importance than has generally been determined.

Third: In a fair proportion of cases the hemorrhages from the uterus are in themselves sufficient to endanger the life of a woman, and can be made to yield only to hysterectomy.

Fourth: With the uncertainty of diagnosis, even after examinations of a section from the cervix and scrapings from the uterus, which show no evidence of malignancy, in women between the ages of forty and fifty who have borne children, and suffer with frequently recurring hemorrhages, hysterectomy is justified. *American Journal of Obstetrics*, LVIII, 748.

Comparison of Lesions Found Post Mortem in Cases Diagnosticated Clinically as Eclampsia and Toxemia of Pregnancy.—For several years there have been made careful examinations of the lesions found post-mortem in pregnant and parturient women dying of convulsions. There have been observed in the case of women dying of eclampsia hemorrhages occurring in and about the portal spaces, with coagulation of the blood constituting the hemorrhages. The livers of women dying of the condition known as "toxemia of pregnancy" presented a condition found in acute yellow atrophy with extensive degenerate processes and disintegration of the parenchyma. Early in the process the lesion consisting of degeneration, necrosis, and disintegration is found about the central vein of the lobule, whence it extends outward toward the periphery as the case advances.

In the light of these pathological findings eclampsia and toxemia of pregnancy seem to be two distinct conditions. Some, however, viewing the subject from the standpoint of chemical analysis of the products of metabolism consider the different forms of toxemia of pregnancy, including eclampsia, as very closely related if not identical conditions. They claim that both conditions result from a disturbance of metabolism, and that the disease takes a different course in different individuals and at different stages of pregnancy.

To furnish further data in the matter, WELCH presents the post-mortem findings in twelve cases on which the diagnosis had been made before death of either eclampsia or toxemia of pregnancy. The findings may be summed up as follows:

Liver—Six cases showed hemorrhagic changes in and about the portal spaces. Of these, two patients were called toxemic. Three cases showed necrosis in the center of the liver lobule. Clinically these had been called eclampsia. One case showed no hemorrhage, but a general swelling of the cells with autolysis. Two cases showed slight cloudy swelling of the parenchyma with no hemorrhages or necrosis.

Kidney—The kidney lesions are similar in all these cases, though in none is it a uniform one. The parenchyma is markedly affected throughout.

The question of etiology naturally asises in connection with these lesions. Numerous theories are offered. WELCH suggests the presence in the blood of a poison, probably an enzyme or a combination of enzymes, which causes agglutination of the red cells which then form emboli, and solution of the endothelium of the blood vessels. The origin of the poison is still unknown, though various theories have been advanced. Further study is necessary along the lines of pathological chemistry. *American Journal of Obstetrics.* Vol. lix, 1.

PEDIATRICS.

Conducted by

R. S. ROWLAND, M. D.

A Report Upon One Thousand Tuberculin Tests in Young Children.—The following observations were made upon hospital patients, the majority being under two years of age. The ophthalmic test was made 615 times; the skin test of Von Pirquet was employed 217 times; Epstein's stich-reaction in thirty-eight cases; and tuberculin injections in 130 cases.

HOLT found that on the whole the results obtained by the different tests corresponded with each other and with the pathological condition as determined by other means, the only notable exception being that dying children or those who were extremely sick did not as a rule react to any of the tests.

Some failures and some unexplained reactions occurred with all of the tests; the results with any test cannot therefore be regarded as conclusive, although a positive reaction creates a very strong probability that tuberculosis is present. This is increased if the result is confirmed by other tests.

There is not much to choose between the skin and eye test. The skin reaction the writer thinks more characteristic and less likely to be doubtful than are some of the eye reactions. Some instances of doubt must occur in the temperature reactions on account of the liability of small children to slight rises of temperature from minor digestive disturbances or other causes.

In ease of application there is a decided advantage in the skin test. The scarification is a trifling thing. The patient does not require continuous observation before or after, and the reaction lasts for a considerable time. The ophthalmic cases need closer watching, the reaction is shorter and may be missed. It cannot well be used in ambulatory patients. The puncture test is slightly more of an operation and may be objected to. The fever reaction is only admissable when the child can be under very close observation.

Objectionable features are wanting in the skin test. There is no local discomfort, no general reaction, and no complications. With proper precautions HOLT believes the eye test to be quite safe, although an intense or prolonged reaction sometimes occurs which is not pleasant to see; besides, in pathological conditions of the eye disastrous results may follow. However, the eye is too delicate and important an organ to be used for a test when any other will answer quite as well. For general use the skin test is to be advised in preference.

With the temperature reaction we may get accompanying the fever constitutional symptoms, which are quite disagreeable. There exists a possibility that a latent process may be lighted up. With mistakes in dosage which have been made, serious consequences may follow. These risks are added objections to the use of this test.

All of these tests have been too recently introduced for the final word to be spoken regarding them. No one of them is absolutely conclusive, as is the demonstration of the tubercle bacillus in the sputum, cerebro-spinal fluid or elsewhere, and one should not fall into the error of depending upon local tests to the neglect of other means of diagnosis, even though the search for the tubercle bacillus involves greater labor. In general, while the tests furnish strong probability of the existance of a tuberculous lesion, they do not enable us to distinguish between a latent and active condition. This may at times be confusing. A child may give a positive skin or eye reaction when suffering from an acute pulmonary disease, which by its course is shown to be non-tuberculous, although grave suspicion of acute pulmonary tuberculosis may have existed, and apparently be confirmed by the tuberculin test. Much needless alarm may therefore be produced by a positive reaction, which really indicates only that the child has a tuberculous focus, but does not prove that his present disease is of a tuberculous nature.

While the greatest assistance in diagnosis, the various tests are always to be taken in connection with the general symptoms and the physical signs. Taken apart from them, however, they may be very misleading. L. EMMETT HOLT, *Archives of Pediatrics*, Jan., 1909. Page 1.

OPHTHALMOLOGY.

Conducted by

W. R. PARKER, M. D.

Persistent Asthenopia.—The author considers the class of patients who suffer from asthenopia which may persist through many years in spite of careful advice and treatment, in whom it is not easy to determine the essential etiological factors.

He cites the case of a boy, aged ten years, who suffered from undue sensibility to light, and blurred vision after prolonged near work. Vision right eye, 6/12½; left eye, 6/7½. Fundus in both eyes dark red and fluffy. He had hyperopic astigmatism. Refraction under sulphate of hyoscyamin gave the following:

O. D. s + 2.00 — c + .50 ax 105° — 6/5.
O. S. s + 2.00 — c + .75 ax 75° — 6/5.

A slight deduction was made in the spherical and glasses given for constant wear.

Four months later all symptoms had disappeared. Three years later the eyes were healthy and comfortable.

At the age of sixteen he returned complaining of a return of old symptoms. In the meantime he had abandoned his glasses. The old fundus changes had returned, and, in addition there was inflammatory change in the choroid along the temporal border of each nerve. He rejected all glasses. Vision in each eye 6/6. The anterior long, perforating ciliary vessels were full and dark, and the sclera a bluish white in the anterior segment. Under a cyclopegic his refractive error was + .75 cyl. ax 90° in each eye. V. — 6/5. the 2.00 D of hyperopia has disappeared. The vision remained normal, but the eyes were weak—unduly sensitive to light, would not bear work, and remained a source of constant annoyance and trouble. The fundus oculi remained fluffy, the papillae congested, and the veins full and dark red. He was finally compelled to abandon his college work. He enjoyed comfort if no attempt was made to use the eyes. After three years a gradual improvement was noted and he returned to college, when the old symptoms returned, but in a mild degree.

Remarks.—It is interesting to inquire into the cause of this asthenopia, extending from his 16th to his 21st year of age. The most careful and elaborate study failed to discover any general disorder to account for the local impairment of functioning power.

The crux of the matter seems to rest in the distention of the sclera in the anterior segment of the globe, as indicated by the increasing refraction of the eye. In the interval in which he had abandoned the use of his glasses, between his 14th and 16th years, he had lost 2 D. of hypermetropia. The sclera in the ciliary region had become thin and bluish-white, while the long, anterior ciliary arteries and their accompanying veins, which perforate the globe at this point, were large and full, suggesting ciliary hyperemia and a relative increase of intraocular tension.

In addition to these indications of disease in the ciliary segment of the globe, attention is called to the crescent of choroiditis embracing the temporal margin of the optic nerves. Without treatment and rest from work, both eyes would doubtless have passed through the "turnstile of astigmatism" into myopic refraction, with the choroidal atrophies at the posterior pole, or, possibly, the posterior staphyloma, which characterizes the myopic ball.

In point of fact, in this patient the distention of the ball, which neutralized two diopters of hypermetropia, was effected by a stretching of the sclera in the anterior segment of the globe.

The eyes remained healthy as long as the correcting glasses were worn, but their neglect, during the critical years of his adolescence, was doubtless an important factor in causing the return of the irritation and turgescence of the uvea. The tension of the ball was raised, its nutrition impaired, and the sclera stretched, thus increasing the diameters of the globe. Any effort at near-work was therefore painful and led to further injury.—Samuel D. Risley, *The Ophthalmoscope*, March, 1909.

OTOLOGY.

Conducted by

EMIL AMBERG, M. D.

Scarlatinous Affections of the Ear.—DR. F. R. NAGAR—(Basel) in a statistical study of the scarlatinous affections of the hearing organ arrives at the following conclusions (in part):

1. Only systematic investigations of a long, uninterrupted, and not picked series of scarlet fever patients can give an exact picture of the influence of scarlet fever upon the hearing organ.

2. The comparison of older with newer statistics seems to show that the number of complications is decreasing. Parallel to this we experience that the character of scarlatina has become more benign during the last years. The number of ear affections might therefore indicate the malignancy of the epidemic.

3. The investigations of more than 750 cases show that in 70% the ear was not affected; 59% were anatomically and functionally normal, whereas in 11% old pathological changes were present.

4. Undoubted scarlatinous ear affections were found in 126 cases=16.8%.

5. The influence of scarlatina on the ear among 750 patients showed the following forms:

(1) Affections of the tubes in 5% of the cases. (2) Diseased condition of the external auditory canal in 7 cases=1.1%. (3) Otitis media catarrhalis acuta non perforativa, 70 cases=9.3%. (4) Otitis media purulenta acuta perforativa, 43 cases=5.7%. (5) Otitis media purulenta acuta with mastoiditis, 6 cases=0.8%. (6) Relapse of a chronic middle ear suppuration, 1%. So that a total of 23% is reached.

6. This percentage appears high when compared with former statistics. (Weil about 10%, Gaesler 7.9%), but among our findings of scarlatinous changes in the ear are a great number which did not show essential clinical symptoms and which therefore would not be considered in statistics of manifest ear affections.

7. The acute middle ear inflammation was classified as early and late stages, according to its occurrence during or after the first week of scarlatina. 8. Generally, the early form must be regarded as a part of the exanthema, whereas for the late form a previous or coexisting fibrinous affection for the nasopharynx must be considered etiologically, especially a secondary infection emanating therefrom. 13. In 6 cases=0.8% of all children examined, or in 5% of middle ear inflammations resp. 11.2% middle ear suppurations a matoiditis occurred which led to an operation. They were partly early, partly late forms, both with equal frequency. Only in one case death resulted which was caused, however, just as much by the primary septic character of the scarlet infection as by the otogenic complication of the thrombosis of the lateral sinus. Otherwise the prognosis was good. 14. In patients who had suffered from a scarlatinous middle ear suppuration a later control-examination (which could be extended only to a fraction of the patients) showed that in 81% of this group a permanent injury to the hearing power remained. The prognosis of an ear affected in this manner, is little favorable as to the function. About 4-5% of the 750 scaret fever patients might have suffered a permanent injury of the hearing organ. 15. Numerically, the early forms are somewhat more prevalent; the grave forms of the ear affections of this epidemic, however, belong mostly to the late forms. 16. The histological examination of the two cases of necrotic scarlet fever otitis show, that in scarlatina similar to tuberculosis a labyrinthitis may occur also without a severance of the continuity of the labyrinthian capsule, namely by nigration of the inflammation through the diseased soft parts (ringband, membrane of the round window).

17. The labyrinth affection seems to occur less through bacterial influences than by general and local lack of resistance. 18. The total destruction of the mucous membrane of the tympanic cavity in these cases furnishes an explanation for the early appearance of cholesteatoma because instead of the cylinder-epithelium a cicatrix-, or transition epithelium must be formed, over which pavement epithelium grows or which is directly transformed into a cholesteatoma-matrix. 19. The appearance of fetid secretion during careful treatment of a scarlet otitis is an ominous symptom for the hearing and also for the life of the patient. It points to a far reaching necrosis of the soft parts and of the bone. 20. If no attention is paid to the observations of beginning labyrinthian irritation, which were established miscroscopically, there were among the 750 cases no panotitis, no sequestration of the labyrinth and no facial paralysis. This coincides with the report of Weil, according to which only one complication of this nature is observed among 750-1000 cases.—*Zeitschrift fuer Ohrenheilkunde and fuer die Krankheiten der Luftwege*, February. 1909.